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State of Maine Energy Emergency Management Plan, 2008

Maine Governor's Office of Energy Independence and Security

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OFFICE OF THE GOVERNOR
1 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0001

JOHN ELIAS BALDACCI
GOVERNOR

JOHN M. KERRY
DIRECTOR
OFFICE OF ENERGY
INDEPENDENCE AND SECURITY

Dear Governor Baldacci,

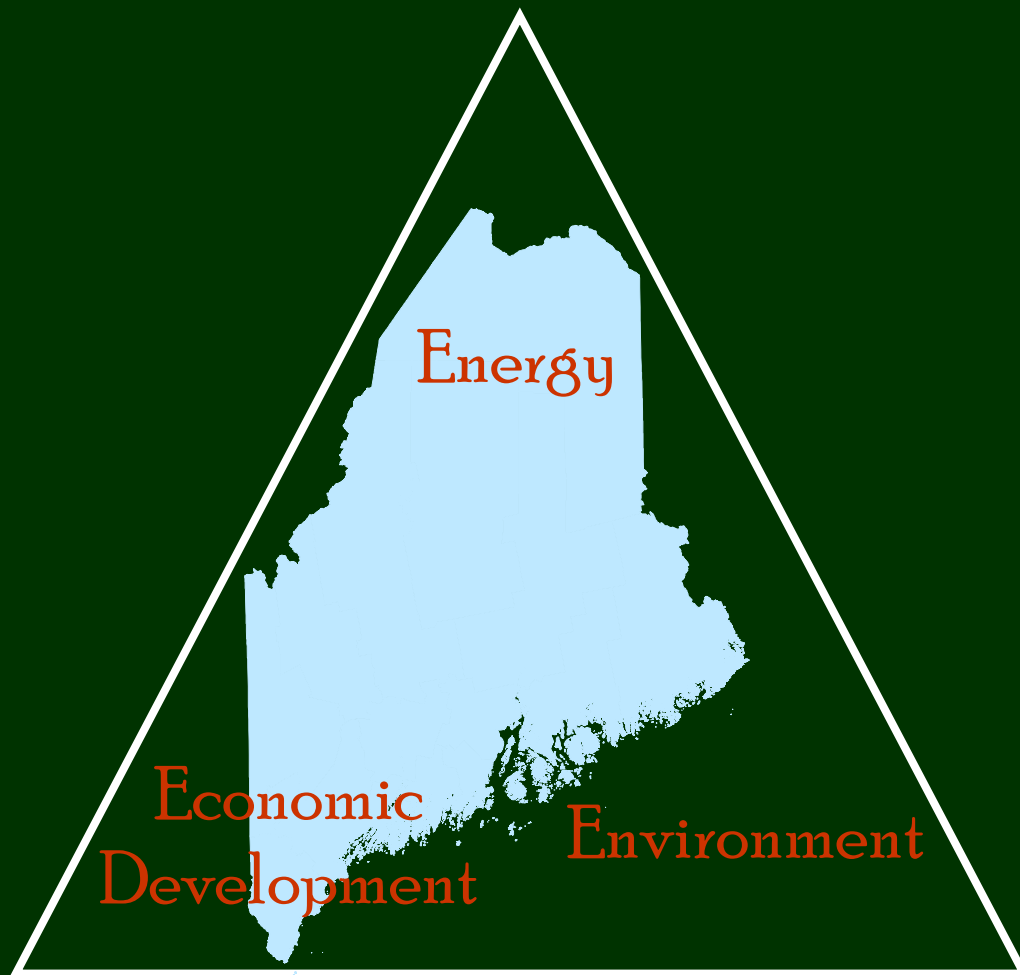
As you noted in the 2007 Governor's Office of Energy Independence Comprehensive Energy Plan brochure, "Our nation, region and state have become dangerously dependent on unreliable, insecure and expensive foreign oil and natural gas. Combustion of these fossil fuels causes climate change, damages the environment, threatens public health, undermines our economic vitality, erodes national security and diminishes our quality of life." As all energy prices rise to historic heights in 2008 and as benchmark crude oil trades at over \$135 barrel on the New York Mercantile Exchange, these stark energy, environmental and economic realities have dramatically increased the vulnerability of Maine citizens. As you know, as a result of Maine's continuing dependence on expensive and unreliable foreign fossil fuels for heating our homes, energizing our businesses and fueling our cars, trucks, trains and boats, Maine exports billions of dollars out of the state each year and is increasingly becoming more vulnerable to rapid price escalations, fossil fuel supply curtailments and infrastructure disruptions.

As you have noted on many occasions, the state must reduce its acute dependence on foreign fossil fuels, while providing the vision and the leadership in the development of public/private partnerships that will enhance the State of Maine's goals of achieving energy security and independence with clean, reliable, affordable, sustainable, indigenous renewable resources. While the state's comprehensive energy plan identifies the principles, organizational framework and concrete steps necessary to advance your vision for an energy independent and secure state, it is clear that there is a need for the state to identify the magnitude and scope of our energy resources; the strengths and weaknesses of our energy infrastructures; and the potential threats to all interrelated energy supply and distribution systems.

Accordingly, the Governor's Office of Energy Independence and Security, in collaboration with the Maine Emergency Management System and the Energy Resources Council is pleased to transmit to you the 2008-2009 State of Maine's Energy Emergency Management Plan. The purpose of the Plan is to provide the Governor, the Legislature, the Executive Departments, the energy industry and the general public with a clear understanding of the strengths and weaknesses of the states public and private capacities and plans to address a potential or actual energy emergency caused by a supply disruption or a rapidly and unsustainable increase in energy prices.

Respectfully submitted,

John M. Kerry,
Director, Governors Office of Energy Independence and Security



State of Maine Energy Emergency Management Plan

Governor's Office of Energy Independence and Security

Facilitating Public and Private Partnerships



EXECUTIVE SUMMARY

Our nation, region and state have become dangerously dependent on unreliable, insecure and expensive foreign fossil fuel products. The wasteful and increasing combustion of foreign fossil fuel products contributes to environmental pollution and climate change, undermines our economic vitality, erodes our public health and diminishes the quality of life for all Maine citizens.

Accordingly, the Governor's Office of Energy Independence and Security, in collaboration with other state agencies and private sector organizations, is committed to advancing the principles, programs and the comprehensive and integrated plans necessary to secure a safe, clean and affordable energy future. To accomplish these goals, it is essential that we enter into a public-private partnership with energy distributors and consumers to clearly identify the strengths and weaknesses of our energy supply, storage, transmission and distribution infrastructures.

The primary purpose of this comprehensive and integrated State Energy Emergency Management Plan is to provide the Governor, the Legislature, the local governments, the public utilities, the private energy industry and energy consumers with a clear understanding of the state's plans, processes, priorities, programs, personnel and timeframes to address the critical energy emergency issues of the 21st Century. In addition to identifying the state's energy resources, infrastructure and the designated state agencies authorized to prepare for and address an acute energy emergency, this emergency management plan identifies the critical public and private entities engaged in the energy industry at the international, regional, state and local levels of activity. Many of these public and private organizations are not only responsible for assisting the state in an energy emergency; they are directly responsible for the production, management, transmission and distribution of many of our energy products and services in the state and region.

ENERGY HAZARDS IDENTIFICATION: provides a description of the various conditions that are monitored during the pre-emergency phase of an energy crisis. This section also explains that the seriousness of a situation will depend on the context and may be affected by factors such as the weather, geo-political events, world energy markets, availability of energy resources, event duration and infrastructure disruptions.

TASK FORCE MODEL: provides an overview of how the state established a task force model for planning for and assessing energy hazards and planning appropriate state level responses to pending or actual energy emergencies. This model contemplates a seamless and well-coordinated collaboration with the Maine Emergency Management Agency, the state agency specifically identified and authorized to conduct a response to an actual or perceived energy emergency. This section identifies various public agencies and private entities that might be asked to serve on an energy task force and some of the contemplated activities they might engage in as task force members.

TRANSITION FROM PREPAREDNESS TO RESPONSE ACTIVITIES: provides a brief analysis of the different forms and dimensions of energy emergencies. This section defines an "Energy Emergency" and the role this plan plays in facilitating the state and private industry's response to a pending or real energy emergency.

MAINE'S ENERGY RESOURCES AND FACTORS CONTRIBUTING TO THEIR VULNERABILITY : provides an overview of Maine's energy resources, its infrastructure and its known vulnerabilities. This section describes the international and regional energy markets involved in providing, transmitting and distributing Maine's energy resources. It also provides an overview of the regional factors that influence Maine energy

EXECUTIVE SUMMARY

security and reliability, especially Maine's vulnerability to sudden price spikes and rapid curtailment of energy supplies.

ENERGY EMERGENCY PLAN DEVELOPMENT AND MAINTENANCE: this section clearly identifies the Governor's Office of Energy Independence and Security, working in close collaboration with the Maine Emergency Management Agency and the Energy Resources Council, as the state agency directly responsible for the development and maintenance of the State of Maine Energy Emergency Management Plan. It describes the seamless transition from the energy pre-emergency planning phase, coordinated by the OEIS, to the energy emergency response phase, coordinated by MEMA. It specifies that the OEIS, in collaboration with the MEMA and the ERC, will update the Maine Energy Emergency Management Plan every two years.

ENERGY INFRASTRUCTURE AND INDUSTRY CONTACTS: identifies critical energy infrastructure (security screened) and key public officials/offices and private energy industry contacts throughout the state and region.

OPPORTUNITIES FOR IMPROVING MAINE'S ENERGY PREPAREDNESS: this section provides recommendations on how Maine can enhance its energy security and preparedness, while reducing its vulnerability to expensive, environmentally damaging and insecure imported fossil fuels.

Acknowledgements:

The Governor's Office of Energy Independence and Security extends its thanks to Ian Burnes, Betsy Elder, Lynette Miller, Joseph Sucaskas, Pat Hart, of Hart Associates, and the various members of the Energy Resources Council that contributed to development of this plan.

STATE OF MAINE ENERGY EMERGENCY MANAGEMENT PLAN

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STATE OF MAINE ENERGY EMERGENCY MANAGEMENT PLAN

INTRODUCTION: PREPAREDNESS IS KEY

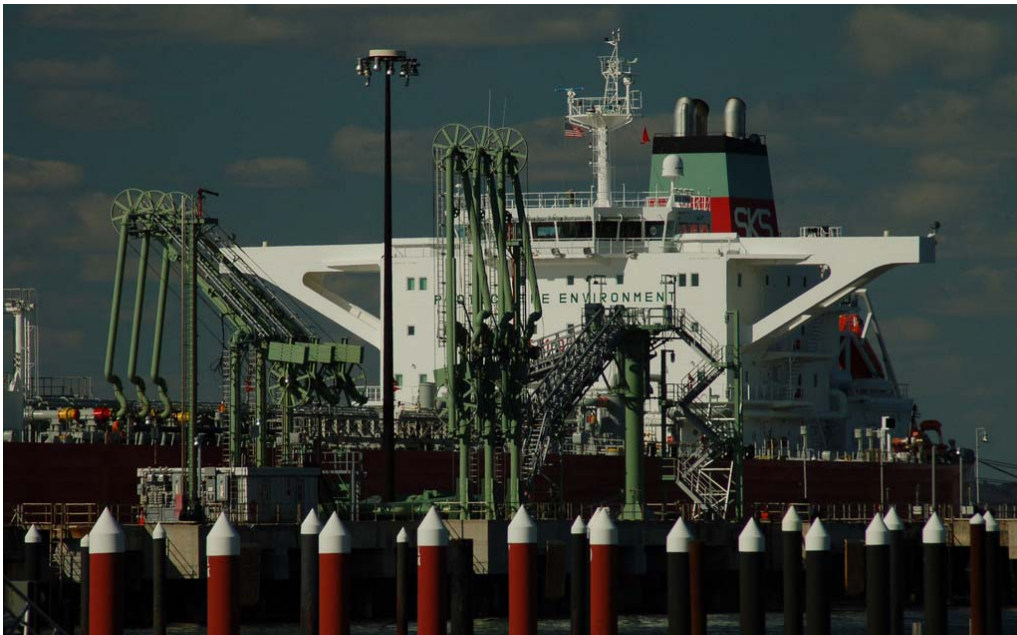
An energy emergency can take many forms. An energy supply disruption or price spike may be sudden and unexpected, or it may evolve so gradually that people can assess the situation and prepare. The seriousness of an energy emergency depends on factors such as the acuteness and duration of the event and availability of energy alternatives. Ultimately, the Governor has considerable discretion, under Title 37-B, MRSA§742, in deciding whether an energy emergency exists and how to intervene.

Because government it is not always able to prevent an emergency, the pre-response, or preparedness phase, of planning is particularly important. The State of Maine Energy Emergency Management Plan has an Energy Task Force (ETF) structure. This ETF structure musters personnel and analytical resources to enable the Governor's Office of Energy Independence and Security, the Maine Emergency Management Agency, and the Energy Resources Council (ERC) to plan for and respond to a potential or actual energy emergency. It coordinates actions of critical public and private resources and ensures that current infor-

mation and subject-matter experts both from within the state and from neighboring jurisdictions are available to support decision makers before and during an energy emergency.

Energy emergencies requiring immediate public and private responses, such as those resulting from natural disasters or terrorism, are directly addressed by the Maine Emergency Management Agency under the more general emergency response plans for those types of emergencies. In

such cases, however, the preparedness framework described above would provide determine whether additional actions for managing the energy aspects of a more generic emergency would be needed.



This plan is divided into two sections. The first lays out Maine's energy emergency management structure—the agencies and their responsibilities and relationships. The second examines each of Maine's major energy sectors and highlights considerations for managing an emergency in one or more of them.

I. MAINE HAZARD IDENTIFICATION

For the purposes of this plan, an *energy hazard* is any combination of factors or conditions that can result in:

- ♦ Physical shortage. A shortage or curtailment in the necessary supply of energy resources, such as liquid heating and transportation fuels, natural gas, or electricity, or
- ♦ Price shock. An unexpected or radical increase in the price of energy resources.

According to statute, an energy emergency situation exists when an actual or impending acute shortage in energy resources threatens the health, safety, or welfare of the citizens of the state (Title 37-B MRSA). See Appendix A for the statutory definition of an energy emergency and a description of the Governor's emergency powers when an energy emergency is declared.

An unexpected or radical increase in the price of an energy resource is not necessarily an energy emergency as defined by law. This plan addresses price shocks as potential emergencies, however, for two reasons. First, sharp price fluctuations can be indicators of supply disruptions. Second, in some situations policy makers and the public may perceive price shocks as emergencies. If some citizens are unable to purchase energy when prices suddenly rise, their health and safety may be in jeopardy. In addition, energy price spikes may put businesses at risk by forcing them to temporarily lay

off workers and delay filling orders and satisfying contractual commitments.

Energy hazards and potential emergency situations can result from:

- ♦ Short-term crises. Unexpected events can dramatically impact the supply and availability of resources (e.g. an ice storm can damage electric transmission facilities).
- ♦ Cumulative impacts of an unfortunate sequence of events. Over a longer time period, where unfolding events can culminate in a

hazard or emergency (e.g. a cold snap increases heating oil demand at a time when supplies in storage are already low, and then a storm restricts transportation and impedes new deliveries).

- ♦ Chronic conditions. An energy hazard can be a chronic condition or exacerbated by

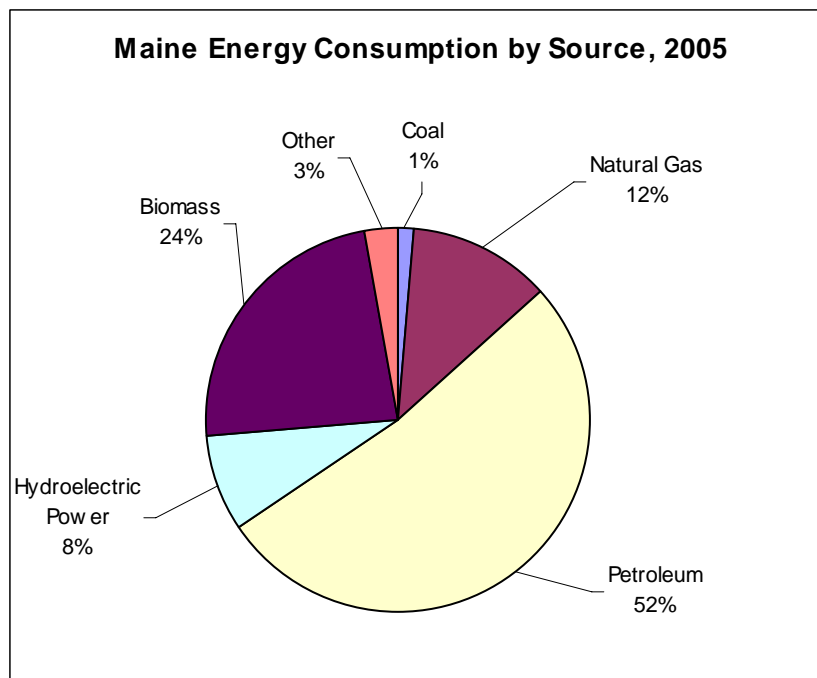


Figure 1. Energy Consumption by source (EIA)

chronic conditions (e.g. over-reliance on a particular type of energy resource, inadequate energy infrastructure, or inefficient use of available energy resources).

This plan provides guidance on short-term crises and emergencies that unfold due to unfortunate sequences of events. In contrast, chronic conditions can and should be addressed through mitigation, such as policies to increase energy efficiency and resource diversity; but such actions are beyond the scope of this plan.

I. MAINE HAZARD IDENTIFICATION (continued)

A. EXAMPLES OF CAUSES OF ENERGY EMERGENCIES

Weather, world events, and industry conditions are among the factors that can bring on energy emergencies.

Examples of how weather or climate could influence energy supply and delivery infrastructure:

- ♦ Severe winter cold increases demand for heating fuels at the same time that Portland Harbor and Penobscot Bay are iced in, delaying or inhibiting terminal deliveries. The winter conditions also delay heating oil delivery trucks.
- ♦ A winter storm causes a tanker or large ship to hit a bridge in Portland Harbor, disabling both the bridge and tanker and spilling oil.
- ♦ A natural disaster such as a Katrina-scale hurricane or an ice storm destroys or damages energy supply and delivery infrastructure.
- ♦ High demand for one fuel results in price increases, leading to unanticipated demand for another type of fuel.
- ♦ High summer gasoline drives continued refinery production of gasoline and delayed production of home heating oil; then cold weather creates demand for home heating oil before inventories are built.

Examples of how world events could affect Maine's energy interests:

- ♦ OPEC intentionally reduces volumes of crude pumped to keep prices high for crude and refined petroleum products.
- ♦ Terrorist acts or acts of war destroy U.S. energy infrastructure or supply, or slow deliveries

to key Northeast ports due to safety concerns.

- ♦ Anti-U.S. political acts, such as the 1970s oil embargo or 9/11-type terrorism, cripple the U.S. economy.
- ♦ Supply disruptions overseas result in spot market fluctuations and volatile prices for U.S. consumers.
- ♦ War in a region of the oil-rich Middle East causes geopolitical unrest and restricts global trade in petroleum products.
- ♦ A pandemic of bird flu causes all forms of

economic activity in cities along the eastern seaboard to slow down, creating re-supply problems for the petroleum-dependent Northeast.

- ♦ A prolonged Canadian railroad strike continues on the winter day a TEPPCO pipeline ruptures. Ninety percent of Maine's propane supply is delayed.



Examples of industry conditions and physical interruptions in supply:

- ♦ Unexpected refinery outages delay just-in-time production and/or delivery of fuels at a time when storage levels are already low.
- ♦ Unusually low storage levels for natural gas lead to volatile prices and fuel switching to avoid shortages.
- ♦ Increased demand for winter fuels delays refinery production of gasoline.
- ♦ Multiple Gulf Coast and Florida hurricanes damage oil production and refining infrastructure so severely that it is off-line for months to recover and rebuild.
- ♦ A TEPPCO pipeline ruptures during a prolonged Canadian railroad strike and the coldest, snowiest part of the winter. Ninety percent of Maine's propane supply is delayed.

I. MAINE HAZARD IDENTIFICATION (continued)

B. SPECIAL PROBLEMS WITH ENERGY EMERGENCIES

Energy events differ from other types of disasters in fundamental ways.

- ♦ Energy emergencies may develop slowly and impact some groups more than others.
- ♦ An energy supply or price event may develop slowly; effects may seem to be scattered but they accumulate over time.
- ♦ Energy events may not be regarded as emergencies but as economic or personal problems, so there may be less urgency about preparing for a possible crisis.
- ♦ Energy price increases may disproportionately affect the most vulnerable segments of society. Those living in remote areas are vulnerable, as are the elderly on fixed incomes and people living in poverty.
- ♦ There is no single responsible agency in energy emergency response; many agencies and organizations require coordination.
- ♦ Energy events may not prompt disaster relief; victims may need to rely on existing assistance programs and insurance coverage, if applicable.
- ♦ Many volunteer organizations lack procedures for responding to energy emergencies; they may also lack criteria for evaluating requests for assistance.
- ♦ Victims might neither seek assistance (out of embarrassment or unfamiliarity with assistance procedures, or because local officials are unequipped to help) nor automatically receive assistance.
- ♦ Different jurisdictions may use different criteria for granting assistance.
- ♦ An energy event may stress assistance programs. Programs may not be available in all areas; redirection of community resources may be necessary.

- ♦ Public assistance programs and shelters may already be used at capacity. Services such as outreach to the elderly and those with special needs may not be available in all areas.
- ♦ Isolated individuals may need outreach and transportation to and from their homes.

C. CASCADING EFFECTS

Hazard-analysis methodology for emergency planning requires preparation for “cascading effects,” hazards brought about by other emergency events. The ETF framework can accommodate cascading effects by virtue of its flexibility: it includes any entity with expertise relevant to the energy hazards at hand.

Although an energy emergency would not necessarily result in other emergency conditions or vice versa (such as when an earthquake causes a gas-line breach or an ice storm causes an electrical outage), there may be more subtle connections. For example:

- ♦ A prolonged period of energy shortage could result in increased crime (e.g. looting during electric outages).
- ♦ A prolonged period of electricity outage could affect transportation because of an inability to pump gasoline.
- ♦ A prolonged period of electricity outage could hinder the re-supply of refined petroleum products because the racks will not operate without electricity.
- ♦ High heating-fuel prices or shortages could bring reliance on firewood; shortages of dry firewood encourage more burning of green wood, increasing the incidence of catastrophic fires.
- ♦ Electricity outages could increase reliance on in-home generators; generators used without proper ventilation pose safety risks.
- ♦ Prolonged energy disruptions could result in

I. MAINE HAZARD IDENTIFICATION (continued)

telecommunications outages, leaving people uninformed about shelters for themselves and their pets.

D. INTERDEPENDENCIES

Hazard-analysis methodology for emergency planning also requires an examination of “interdependencies,” how an energy emergency will manifest in random other ways as disruptions to security, safety, and comfort, with possible catastrophic results. “Interdependency” refers to the mutual functional reliance of essential services—namely networked utility services—on other networks, utilities, services, or auxiliary non-utility systems. Interdependency can exist with or without physical interconnection. For utilities, key classes of interdependency are physical, cyber, geographical, and institutional.

- ♦ Because gasoline pumps use electricity, a prolonged electricity outage could leave essential service vehicles without fuel.
- ♦ A prolonged period of electricity outage could hinder the re-supply of refined petroleum products because the racks will not operate without electricity.
- ♦ A prolonged period of electricity outage would hinder telecommunications, SCADA systems, water pumping utilities, and the Federal Aviation Administration.

Network outage would have a profound effect on infrastructure protection and many critical services, including electric and communication systems, healthcare, national defense, financial markets, shipping and manufacturing, law enforcement, and security for ports and international borders.¹

E. ENERGY MARKETS ARE REGIONAL, GLOBAL, AND INTERDEPENDENT

Maine participates in regional and global markets for petroleum products and natural gas, and regional markets for electricity. An understanding of the movement and storage of energy supplies for international markets and the region is necessary for understanding the vulnerability of energy supplies in Maine. Interrelationships exist at and among all levels of the various energy markets. For example:

- ♦ Disruptions in natural gas supply may cause electric generation plants or large industrial customers to switch to oil—the same type of oil used for residential home heating.
- ♦ An ever-increasing percentage of the region’s electric generation is fueled by natural gas; a disruption in natural gas supplies or delivery infrastructure could result in electricity shortages.
- ♦ High gasoline demand could result in delayed refinery production of home heating oil; delayed production could mean lower inventory levels.
- ♦ Drought may result in reduced hydro-electricity production, resulting in increased production of electricity from fossil-fired generation and increased demand for fossil fuels.

The interdependencies among utility sectors are growing more numerous and significant. For example:

- ♦ Electric generation is increasingly dependent on the availability and deliverability of natural gas.
- ♦ Telecommunications systems rely on electricity to run.
- ♦ Electric industry communications rely on telecommunications infrastructure.

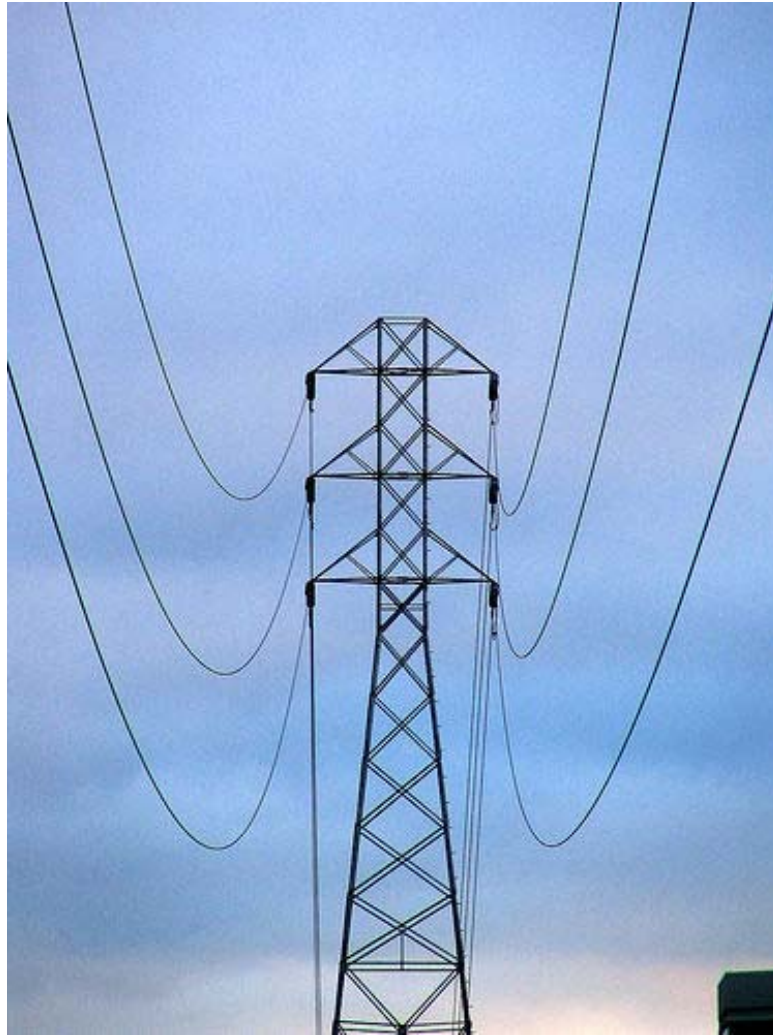
Some industrial and commercial users have dual-capacity energy systems.

**I. MAINE
HAZARD
IDENTIFICATION**
(continued)

**F. INFRASTRUCTURE
SECURITY**

Energy infrastructure is vulnerable not only to natural disasters but to deliberate assault. Increasing dependence on the internet for energy industry communications and dispatch increases vulnerability to cyber-attack. Energy infrastructure is also prone to physical attack, given numerous sources of public information on its location and importance and the accessibility of energy facilities to the public.

Energy security has traditionally been the responsibility of the utilities and the energy industry, and access to information, even by energy regulators and emergency personnel, is limited. On the one hand, individual companies are perhaps in the best position to assess their own facilities and determine how best to protect their assets. On the other hand, because individual companies may understandably wish to keep their individual plans and countermeasures confidential, there may be only limited information available to emergency response personnel.



Maine law provides that “[e]very public utility shall furnish safe, reasonable and adequate facilities and service” (35-A MRSA §301(1).) The PUC provides oversight and encouragement, but security itself is primarily the responsibility of the utilities, which are required by FERC to meet certain security standards. Meanwhile, the secu-

rity of electric generation in Maine and much of the regional electric generation on which Maine depends are an industry responsibility pursuant to federal standards and are not regulated by State government.

Security of interstate facilities, such as gas pipelines, is also an industry responsibility, with some federal oversight. Security plans are filed with the U.S. Department of Homeland Security. State utility regulators have an opportunity to review these plans when they are prepared, but copies of the plans are not kept at the State level.

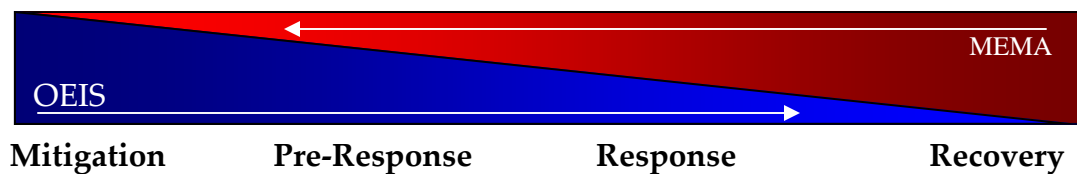
Security of other private-sector facilities, such as petroleum storage facilities, is generally handled by individual companies, in some cases working cooperatively with local officials. Access to information by State officials is subject to industry discretion.

II: TASK FORCE MODEL

One might assume that an energy emergency plan should be detailed and specific. The reality, however, is that because each emergency response, like each emergency, is unique, an energy emergency plan should set up processes for determining an appropriate response; it cannot realistically prescribe appropriate responses for

all potential situations. This plan is designed to provide guidance on the energy aspects of short-term crises and emergencies that unfold due to unfortunate sequences of events.

The Continuum of Responsibility During all phases of Energy Emergency Management



THE FOUR PHASES OF AN ENERGY EMERGENCY

The four phases of 'an emergency' for planning purposes typically include mitigation, preparedness response and recovery.

- Mitigation:** Proactive mitigation programs lessen the risk of an energy emergency and may reduce the need for preparedness activities, including ETF mobilization. Mitigation may include policies, programs, and educational initiatives that encourage load reductions, energy efficiency, energy resource diversity, fuel-price risk management (e.g. through pre-buy arrangements), and protection of at-risk populations. Mitigation activities are functions of the State's energy programs, and they take on added importance in the context of emergency planning.
- Preparedness or "Pre-Response":** . Also called pre-response, preparedness activities may include situation assessment, intergovernmental communication and coordination, and proactive provision of public information. The ETF activates during this phase to inform the ERT, which is the entity responsible for coordinating State response activities.
- Response:** Possible responses to an actual or perceived energy emergency can range from no action to, in extreme situations, fuel rationing and direct assistance. The ETF may continue to function to support the ERT during the response phase to ensure effective intergovernmental communication and coordination and to provide guidance to the Governor and other response agencies.
- Recovery:** Most emergencies do not warrant recovery action from the State. The Federal Emergency Management Agency (FEMA) does, however, provide assistance for physical damage incurred by certain utilities. This assistance would be pursued by the qualifying utilities themselves, where appropriate; ETF activity during this phase is not anticipated.

II: Task Force Model (Continued)

A Pre-Emergency Energy Task Force (PEETF) convenes in anticipation of an energy emergency. In the event that the Governor formally declares an energy emergency, the PEETF will then inform MEMA's response as it carries out its own management plan, the State Emergency Operations Plan (EOP). Specifically, the PEETF would have pre-identified fiscal, personnel and physical resources and provided for the development an Emergency Task Force (ETF) to assist and inform MEMA's Emergency Response Team (ERT).

Because energy situations are dynamic, this plan addresses the need for timely information and flexibility. In an acute emergency that does not allow time to convene a PEETF or an ETF, MEMA will have to act without the assistance of a formal ETF.

In a sudden and severe energy emergency that overwhelms the state's ability to respond, the Governor would immediately request federal assistance and the ERT would then work with federal agencies and the private sector through the Energy Annex (Emergency Support Function #12) of the National Response Framework.

A. ENERGY TASK FORCE MOBILIZATION

The Energy Task Force (ETF) can be mobilized by the Governor, the Governor's Office of Energy Independence and Security, or the Energy Resources Council. The ETF serves in a situation-assessment and planning role. In a declared energy emergency, the ETF provides technical support to the Emergency Response Team (ERT), which is managed by MEMA. Although the formation of a task force subset may help focus ERC's involvement, authority for planning and response should clearly reside with MEMA, es-

pecially in an acute emergency.

B. ENERGY TASK FORCE COMPOSITION

The ETF's composition will be tailored to the event. The ETF should include decision-making representatives from State agencies relevant to the emergency, and it should be expanded as appropriate to include relevant industry, county government, local government, and nonprofit participants.

A list of potential State agency participants and their respective authorities regarding energy emergencies is provided in Table 1. More detailed descriptions of energy programs and expertise across State agencies is contained in the 2003 Maine Energy Programs Resource Guide, updated regularly and available at www.maineenergyinfo.com/docs/Directory.pdf

In many cases, industry can provide the best information on what is driving a given supply or price situation. Public-private cooperation can also be invaluable for getting information to the public quickly and affordably. Potential industry participants are utilities, generation plant owners, liquid fuels distributors and brokers, pipeline representatives, and trade associations. Up-to-date contacts for energy industry participants are available from the PUC and OEIS.

Other potential task force participants include county and municipal governments, the American Red Cross, and other assistance agencies and organizations. Participants may include members of MEMA's ERT as well as members of VOAD (Voluntary Organizations Active in Disaster); ERT and VOAD member lists are available from MEMA.

II: Task Force Model (Continued)

C. CONCEPT OF OPERATIONS

ETF operations are based on the following general

assumptions:

- ♦ The ETF will provide technical assistance, advice, and support to the ERT and to the Governor's office. It will facilitate communication and information sharing.
- ♦ Access to reliable information is crucial. All agencies with relevant information will voluntarily provide it. The information provided in this report is for illustration only; it is by no means adequate in itself as the basis for emergency actions.
- ♦ All agencies identified as having a role in the management of a potential energy emergency will voluntarily participate in the ETF process.

Table 1. Maine State Agencies with Resources for Energy Emergency Preparedness

Agency	Resources
Maine Emergency Management Agency	<p>Statutory authority to coordinate the activities of all organizations for emergency management within the State Assistance with public information in pre-event status of energy emergencies</p> <ul style="list-style-type: none"> • Coordination of energy emergency planning with county and local government and volunteer agencies • Authority to call in the National Guard for assistance Information and system vulnerabilities and security risks • Run Simulated Table-top Energy Emergency exercise for the Energy Task Force
Office of the Governor	<p>Executive authority to convene an ETF, as needed</p> <ul style="list-style-type: none"> • Authority to proclaim an energy emergency (37-B MRSA-742) • In cases of emergency, certain powers to implement or waive certain programs, standards, priorities and quotas
Governor's Office of Energy Independence and Security	<p>Authority to convene an ETF, as needed</p> <ul style="list-style-type: none"> • Fuel supply and price monitoring • Advising the Governor and Legislature on energy emergencies related to heating and transportation fuels and energy policy generally. • Communication and coordination point of contact with petroleum terminal operators during an energy emergency • Receipt and management of fuel inventory data twice a month from terminal operators
Public Utilities Commission	<p>Advising the Governor during energy emergencies re. electricity; also waiver authority on its regulations during emergency situations</p> <ul style="list-style-type: none"> • Authority to require updates of utility restoration plans and infrastructure information to improve utility readiness • Monitoring of utility activities, including facility/service outages • GIS and other data on key facilities • Interagency notification by email of energy emergency information • Maintenance of an energy industry emergency contact list • Member of the Emergency Response Team
Administrative & Financial Services	<p>Management of the State of Maine's fuel inventory for State facilities</p>

Table 1. Maine State Agencies with Resources for Energy Emergency Preparedness (continued)

Administrative & Financial Services	Management of the State of Maine's fuel inventory for State facilities
Department of Conservation	Mobile generators and communications equipment for remote facilities that can be used for emergency response
Environmental Protection	Authority to approve suspensions or waivers of certain requirements for limited periods of time to relieve or avoid an energy shortage
Human Services	Emergency and other assistance programs
Department of Transportation	Management of the State of Maine's fuel inventory for transportation Established protocols for reporting energy delivery issues at Port facilities and sharing information Administration of various transportation demand management programs
Maine Housing	Administration of LIHEAP and weatherization programs Energy Crisis Intervention Program (ECIP) which provides emergency fuel deliveries and heating system repair
Maine State Police	Authority to grant transportation waivers regarding border issues, weight limits, route restrictions, etc.
Attorney General	Investigation of potential violations and enforcement of Monopolies and Profiteering law. 10 MRSA §§1101-1109 and the Unfair Trade Practices Act. 5 MRSA § 207 and market power monitoring under Petroleum Market Share Act. 10 MRSA §1671-1682.
Public Advocate	In-house energy industry expertise and relationships with consumer groups

II: Task Force Model (Continued)

- ♦ The ETF will be led by the Director of the Governor's Office of Energy Independence and Security.
- ♦ The ETF will expand on a situation-specific basis to

include industry participants and local, regional, or federal government.

- ♦ Where the ETF is not expanded to county or local officials, MEMA's ERT will share ERT contact information with the ETF, as appropriate.

Some mitigation programs are also resources for the ETF to call upon during preparedness or response activities:

- ♦ Existing fuel assistance programs to low-income households can provide a safety net during winter price shocks, which can lessen the effect of an energy crisis in the community at large. Margin over rack program through

Maine Housing further assists people with low incomes.

- ♦ Public education efforts such as Keep ME Warm, Fuel-Wise, 10% Challenge, and www.maineenergyinfo.com offer energy efficiency information and educational materials.

Each participating department or organization conducts those activities germane to its mission, and all active departments and organizations must be fully informed of actions taken. The ETF is not intended to supersede the ERT, PUC, or other departmental or organizational authorities.

The ETF would participate in response activities. Response activities, where relevant, would involve implementation of the State Emergency Operations Plan (EOP), which defines operational procedures for all types of hazards and is administered by the Maine Emergency Management Agency in emergency situations. The EOP

II. Task Force Model (Continued)

is organized by function, identifying those steps necessary to carry out direction and control, alerting and warning, resource management, evacuation, mass care, emergency public information, etc.

ETF involvement in the recovery phase is not anticipated. (Recovery activities, if pursued, might involve requests for federal disaster relief and would be initiated by those entities that would benefit, such as utilities.)

D. COMMUNICATION

ETF operations would likely include vital communications:

- ♦ Gathering data.
- ♦ Assessing risks and impacts.
- ♦ Developing a situation-specific action plan before taking action.
- ♦ Updating, integrating, and reviewing data.
- ♦ Reassessing risks and impacts.
- ♦ Revising the situation-specific action plan.

In addition to any communication processes established by and for the specific ETF, the following communication routes are available:

- ♦ Federal email notification system for major energy disruptions. The **USDOE Office of Electricity Delivery and Energy Reliability** (OE) maintains a restricted-access communications network for key State-level personnel to exchange information and coordinate with each other and the Department of Energy during energy emergencies. This system, Energy Emergency Assurance Coordinators (EEAC), includes representatives from OEIS and the PUC.
- ♦ Regional energy monitoring group. The New England Governors' Conference (NEG) conducts weekly conference calls among energy

coordinators in each of the New England states and New York, including appropriate federal agency and energy industry representatives, to share information on regional energy supply, demand, and price issues.

- ♦ **Northeast Gas Association:** The Northeast Gas Association (NGA) has a task force that assembles to review the operation and supply situation of the gas network in New England. NGA participates in the weekly NEGA conference calls and reports directly to state agencies on the status of gas supply and security in the region on a bi-weekly basis.
- ♦ Ongoing communications on energy security. **The Energy Resource Council** reserves time on its monthly agenda to share information on energy security. It is the responsibility of Council members to make sure their staffs inform them of emerging energy situations and to share information with other council members and with MEMA, when appropriate.
- ♦ Proactive information sharing for planning purposes. Information on new studies of regional energy security or information about potential energy hazards should, as a matter of regular business, be shared with the PUC, OEIS, and MEMA.
- ♦ **Media:** In an emergency, it is important to keep the media informed but calm about the situation as it develops; in an emergency, partial information is almost always better than an official information vacuum. Care should be taken not to sensationalize events to the press. Keeping the public calm will help prevent panic-buying. To the extent possible, members of the ETF should share timely information on the scope, nature, severity, and possible duration of the emergency and share all information communicated with the media with each other to encourage consistency and clarity in communications.

III: TRANSITION FROM PREPAREDNESS TO RESPONSE ACTIVITIES

When to shift from preparedness to response will necessarily be situation-specific, and any transition must dovetail with ISO New England's Operating Procedures and federal agency procedures through the National Response Framework. Detailed descriptions of the National Response Framework Emergency Support Function 12 Energy Annex and the relevant ISO-NE Operating Procedures are in Appendix O and P respectively.

STATUS CALM: Routine supply and price monitoring reveals no alarming trends.

- ◆ OEIS continues to monitor the supply and price of energy resources.
- ◆ OEIS routinely disseminates information to the public, the Governor, Legislature, and members of the ETF, as appropriate.
- ◆ Administration of existing mitigation programs (conservation, public education, etc.) continues.

STATUS WATCHFUL: Monitoring indicates a trend to high prices and/or shortages in Maine or shortages in neighboring interrelated markets that could affect Maine.

- ◆ The Energy Resources Council and/or Governor's Office calls for follow-up meetings of the ETF. Assignments are given for active information sharing, research, and coordination activities.
- ◆ ETF designees assess availability of inter-agency resources, set priorities, and assess the need for shifting personnel resources among state agencies to perform event-specific duties.
- ◆ ETF designees step up public information programs as appropriate to include specialized press releases, public service announcements, newspaper inserts, etc.
- ◆ ETF designees assess the need for voluntary energy-saving activities such as expanded ride-sharing programs, voluntary conservation, etc.

STATUS ALERT: An actual critical shortage is occurring, a sudden event makes a shortage immi-

nent, or long-term high prices have exhausted financial resources.

Note: The alert level either (1) initiates the activities listed below, or (2) describes, for organizational purposes, the state of affairs as symbolized by the activities below.

Alert Level 1 – Local and state emergency response agencies respond to the emergency.

Alert Level 2 –

- ◆ The State EOC is activated with partial staff to track and coordinate response activities.
- ◆ Members of the ETF act as technical advisors to the EOC.
- ◆ The ETF considers steps the Governor can take short of a declaration of emergency, such as load reduction through conservation, checking on neighbors, and, finally, evacuation or relocation of those most affected.
- ◆ The need for a Governor's Declaration of Energy Emergency is assessed (see Appendix A).
- ◆ Consideration begins, if appropriate, of a request for release from the Northeast Heating Oil Reserve.

ALERT LEVEL 3 – Full activation. All activities and communications should adhere to the protocols of the National Incident Management system.

- ◆ All Alert Level 2 activities, plus activation of the State's full Emergency Response Team.

ALERT LEVEL 4 – Catastrophic event.

- ◆ All Level 3 activities, plus implementation of the Federal Response Framework (NRF).
- ◆ The ERT works with the federal government and the private sector through the Energy Annex (Emergency Support Function #12) of the National Response Framework.

IV. INTER-JURISDICTIONAL RELATIONSHIPS

Maine may coordinate its energy emergency activities with those of other Northeast states and eastern Canadian provinces. The New England ISO, the New England Governors' Conference, the National Association of State Energy Officials, the Conference of New England Governors and Eastern Canadian Premiers, the Northeast International Committee on Energy, the New England Governor's Power Planning Committee, the Coalition of New England Governors, the New England Conference of Public Utility Commissions, and the U.S. Department of Energy are a few of the organizations available for inter-jurisdictional coordination.

V. CONTINUITY OF GOVERNMENT

Any assignment of lines of succession, designation and protection of primary and alternate operational sites, and preservation of records will be conducted in accordance with the State Emergency Operations Plan and applicable county and local plans.

VI. MAINE'S ENERGY RESOURCES AND FACTORS CONTRIBUTING TO THEIR VULNERABILITY

Basic information on Maine's energy resources and Factors Contributing to their vulnerability is provided below for illustrative purposes. Continuously generated current information should be assembled by ETF activities. Maine's energy resources depend on both in-state and regional infrastructure and regional energy markets.

A. LIQUID FUELS

Our nation, region, and state have become dangerously dependent on foreign fossil fuels. Crude oil prices have escalated to nearly \$120/barrel and natural gas prices are constantly rising. Meanwhile, Maine is nearly 100 percent dependent on petroleum products to fuel our cars, trucks, marine craft, and planes; we are nearly 80 percent dependent on petroleum products to heat our residences—the greatest per capita dependency in the country. Diesel prices have caused major economic hardship for our trucking and forest products industries. Liquefied petroleum gas (LPG), kerosene, and propane used for space heating, drying, and cooking; natural gas; and heavy fuel oil are rising in price. Fuel used in industrial boilers and electric power generation is not only harmful to the environment, it is also increasing in cost.

Maine participates in a global and unregulated petroleum market that involves numerous com-

panies, both domestic and foreign. Oil is an international commodity and the U.S. imports well over half the oil it consumes. Maine imports 100 percent of its oil and natural gas. The price and supply of oil here are driven not only by the market forces of supply and demand that influence other commodities, but also by U.S. domestic and foreign policy decisions in combination with the policies of oil-producing nations. Other market forces have a large impact on the petroleum industry, including product seasonality, curtail-

ments (such as refinery outages), and acts of nature. World oil and gas markets are complex and so energy emergencies that involve petroleum products are complex, requiring states to work with multiple organizations to develop effective responses.

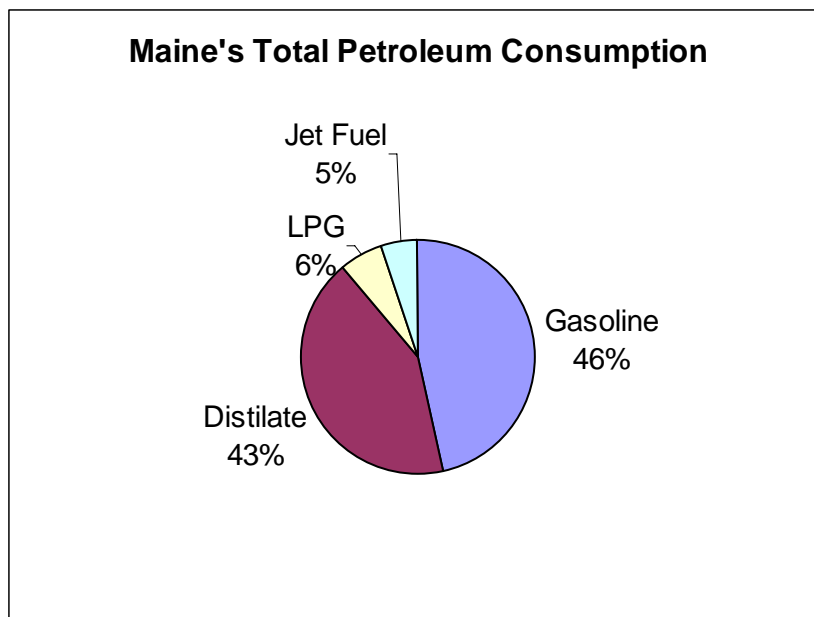


Figure 2. Total Petroleum Consumption (EIA)

At the refining level, the availability of petroleum products depends on the maintenance of an aging system of refineries. In spite of advances in refining chemistry, technology, and safety, no new refineries have been constructed in the U.S. in over 20 years. When refineries suffer outages of any kind, product supply is restricted and prices increase. The U.S. petroleum distribution and delivery system, with its network of underground pipelines, regional and local storage, and sophisticated computer controls, offers some reliability. But locally, transfers and re-supply efforts can be disrupted by severe weather and natural disasters. If

LIQUID FUELS

-General (continued)

problems occur in production, refining, or transport, the result is often a spot shortage with predictable

price impacts. In Maine, annual consumption of #2 heating oil and kerosene is roughly 1,009 gallons per household and 427 million gallons statewide.

Given the complexity of the international and national petroleum markets, there are steps a state can take in response to a petroleum product shortage and/or disruption situation:

- ◆ Issue public warnings and announcements.
- ◆ Monitor conditions.
- ◆ Require county and municipal petroleum product emergency plans.
- ◆ Issue public requests for voluntary demand reductions.²
- ◆ Enhance supply and re-supply.
- ◆ Develop strong public/private relationships with all relevant international, national, regional, state and local oil producers, refiners, retailers, and distributors.³
- ◆ Grant waivers to delivery trucks to extend hours of service.⁴
- ◆ Take investigative and enforcement measures.
- ◆ Impose purchase restrictions on liquid fuels and petroleum products, including minimum purchase requirements, odd/even license plate purchase authorizations, or staggered days of operation.
- ◆ Request federal assistance using the protocols

set up by the National Response Framework Energy Annex.

i. TRANSPORTATION FUELS

Maine transportation fuels arrive in Maine primarily by waterborne tanker or barge through terminals in South Portland, Searsport, and Bangor. The fuels are distributed throughout the state primarily by truck. Some portion is exported by truck to neighboring states. There is also a pipeline for gasoline running from South Portland to Bangor. The majority of transportation

fuels come through South Portland.

Factors Contributing to Maine's Vulnerability:

- ◆ Limited storage capacity. Limited storage capacity and the expense and regulatory hurdles associated with increased storage capacity leave Maine with limited supplies in the event of disruptions. The amount of supply in storage varies by terminal and by season. Two terminals in South Portland indicate they have nearly 30 days of gasoline supply reserves under normal demand circumstances, though supplies may be lower during the spring and fall, when the type of gasoline used in Maine changes. During changeover, there may be collectively only about a week's worth of gasoline in storage.
- ◆ Just in-time inventory. Industry reliance on just-in-time inventory depends on a flawless delivery system.
- ◆ Heavy reliance on one port. The vast majority of transportation fuel volume comes through Portland Harbor.

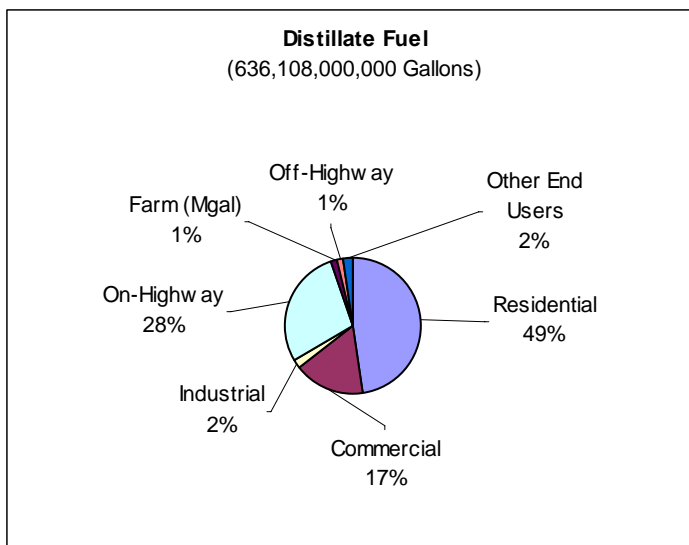


Figure 3. Distillate consumption by sector (EIA)

I LIQUID FUELS

-Transportation (continued)

-#2 Heating Oil

- ♦ Price variations. Gasoline prices are affected by changes in crude oil prices and changes in the supply/

demand balance. Typically, gasoline demand is significantly higher at its seasonal summer peak than at its low point (typically mid-January).

- ♦ Commercial reliance. Diesel fuel is used for trucking, in the construction industries for mobile equipment, and for backup electric generation.

Note: A number of factors contribute to Maine's gasoline security:

- ♦ Performance-based environmental regulation. Maine's gasoline formulation standards are performance-based. Generally speaking, much of the State uses conventional gasoline, but the regulations are flexible enough to allow reformulated gasoline (RFG) to substitute as necessary. Southern Maine relies on mid-Atlantic regular grade fuel for summertime use but RFG blends used in southern New England also meet Maine's fuel specifications. This is important for energy security because when supply is limited or demand is high, the market can pull in a variety of qualifying fuels to meet Maine demand. Being part of a larger market also reduces risk of price fluctuations and supply disruptions.
- ♦ Regional fuel specifications. As a matter of policy, Maine is pursuing a regional fuel specification to further improve energy security. Regional fuel specifications are important because Maine's transportation fuel market is relatively small. If Maine had a boutique fuel, it might only be supplied by a single refinery, increasing Maine's vulnerability to supply disruptions.

ii. #2 FUEL OIL/HEATING OIL

Maine residences are overwhelmingly dependent on #2 heating oil to heat 80% their homes.⁵ While the saturation of the market place allows the prices in Maine to be slightly below the nation average, the monolithic dependence leaves Maine vulnerable to shortages and price spikes.

INFRASTRUCTURE AND DISTRIBUTION

The Northeast gets almost half its fuel oil supply as a refined product from the Gulf Coast via the Colonial pipeline to Linden, New Jersey. Refineries in Philadelphia and New Jersey send oil to Boston and New York harbors. From there, waterborne deliveries are made to Maine harbors via coastal terminals in Portland, South Portland, Searsport, Bucksport, Wiscasset, Yarmouth, and Bangor. (Deliveries to Wiscasset and Yarmouth are heavy #6 oils for electric generation). Maine terminals also receive roughly 50 percent of its products by truck and marine transportation from an Irving refinery in St. John, New Brunswick. Maine has pipeline capacity that carries crude oil to refineries and bulk terminals near Montreal, Quebec.

Maine's fuel oil distribution system has three components: primary terminal facilities, which receive bulk loads of products; secondary, or bulk, storage facilities; and tertiary distribution facilities with local tank storage. Maine's oil distribution system and the state of local inventories depend on the petroleum industry's ability to re-supply the Northeast.

FACTORS CONTRIBUTING TO MAINE'S VULNERABILITY

- ♦ Limited local storage. Maine has very little storage capacity, no pipelines for local distribution, and little tannage. At any given time, Maine has the capability to hold and distrib-

I LIQUID FUELS

#2 Heating Oil (continued)

ute about four to five days' worth of heating oil.

- ◆ Distance to refineries.

There are no refineries in

New England, although the one in St. John, New Brunswick, is an active source for regional supplies.

- ◆ Just-in-time inventory management. Over the years, the petroleum product distribution system has changed from storage to just-in-time inventories, or fresh supply operations. This eliminates large storage tanks for environmental and economic reasons. Industry reliance on just-in-time inventories is risky, as it demands a flawless delivery system, especially given limited in-system storage. When inventories are low, relatively small changes in demand can result in significant price changes.
- ◆ Location at end of the supply line. Maine is at the end of a long supply line and is heavily dependent on ship or barge delivery of petroleum products. This dependence on marine transportation leaves Maine vulnerable to a variety of economic and weather conditions.
- ◆ Use of fuel oil in most Maine homes. Either #2 fuel oil or #6 fuel oil/kerosene is used by more than 80 percent of Maine households for space and water heating (EIA 2001), making the state highly dependent on fuel oil supply reliability.
- ◆ Weather dependencies. Marine transportation facilities can be iced in during severe weather, and Coast Guard ice cutters increasingly have other demands on them. Truck transport can be constrained by ice and snow.
- ◆ Dual-fuel power plants. Gas-fired power plants in the region and some industrial facili-

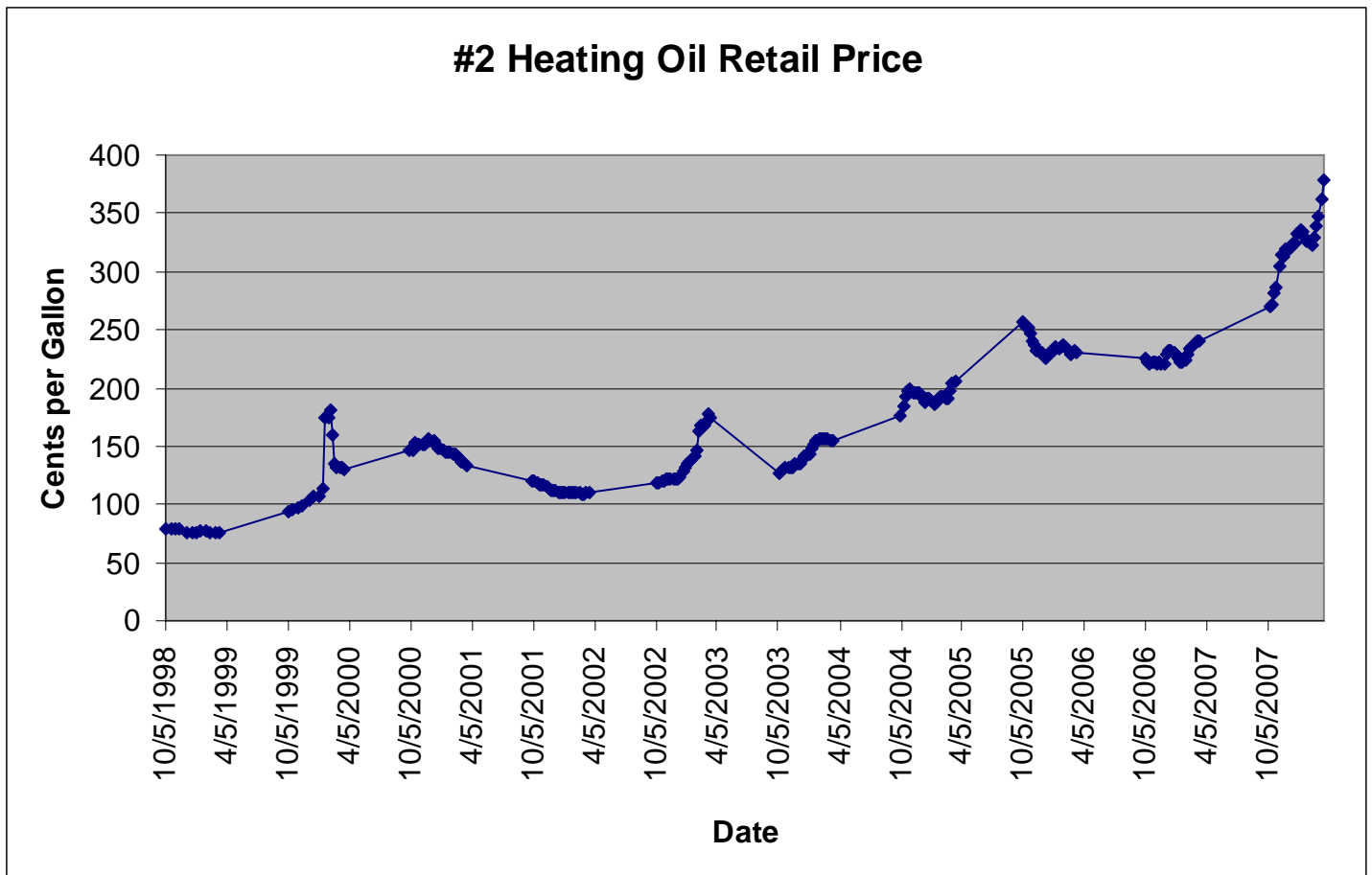


Figure 4. Heating oil Retail Price (EIA)

I LIQUID FUELS

-#2 Heating Oil

(continued)

-Propane

ties in Maine use #2 oil as a backup fuel. Thus the #2 fuel oil market can be significantly affected by supply

disruptions or price shocks in natural gas markets.

- ♦ Pipeline vulnerability. Portland Pipeline damage, constraint, or curtailment could pose international vulnerabilities.
- ♦ Infrastructure limitations elsewhere in the region. The Chelsea Street Bridge Terminal in Everett, Massachusetts, has a very narrow access point that can accommodate only single-hulled tankers, which are few in number; and even single-hulled tankers pass with only inches to spare. According to the Massachusetts Office of Energy Resources, an accident at this terminal would put 16 percent of New England's oil supply in jeopardy.
- ♦ Regional reserve limitations. The regional heating oil reserve can, under certain conditions, be used to relieve regional demand. But because the reserve is small (about 2 million barrels) and is stored in New Jersey, Connecticut, and Rhode Island, the oil is unlikely to be physically delivered to Maine under emergency conditions. (See Appendix G for a description of federal and regional petroleum reserves.) In addition, prompt movement of product from the regional heating oil reserve to retail dealers may be difficult due to prior commitments of available trucks and barges. At best, releases from the reserve might affect supply and price elsewhere in the region, with indirect supply and price benefits for Maine.
- ♦ Ten days for foreign deliveries. It takes about ten days for ships to bring heating oil from the Gulf of Mexico into New York Harbor and from suppliers in Venezuela to New England.

iii. PROPANE

Roughly 26,245 Maine households (5.5 percent of the population) use propane as a primary source of heat.⁶ Businesses including restaurants, big-box retail stores, light manufacturing enterprises, greenhouses, chicken and tomato farms, nursing homes, and hospitals also use propane. During the last decade, Maine's propane consumption has increased, with February 2006 usage at 337,000 gallons per day. Estimates of Maine's current propane consumption data indicate that 450,000 gallons per day is typical in the winter. In Maine, annual consumption of propane for home heating is roughly 1,990 gallons per household and 58 million gallons statewide. The annual cost per household to heat with this fuel is roughly \$2,772.

INFRASTRUCTURE AND DISTRIBUTION

New England receives propane by rail, sea, and pipeline. Algerian and Middle Eastern propane comes via terminals in Providence, Rhode Island, and Portsmouth, New Hampshire. The Texas Eastern Products Pipeline Company (TEPPCO) pipeline from Texas to Albany, New York, provides more supply, and outsourced Canadian propane arrives in Maine primarily by rail. Seventy percent of Maine's propane arrives by rail to a depot in Auburn. Most of this product is delivered by Canadian National, CSX, and Maine Montreal and Atlantic (MMA) railroads. Product comes from refineries in Canada and is provided by an affiliate of Duke Energy named NGL Services, which acquired former Gas Supply Resources in May 2001. The Denver-based company is also a general partner of the TEPPCO pipeline. GSR's integrated propane terminal operation had an import terminal facility in Providence, Rhode Island, and bulk supply depots in Duke Energy's Northeast network in the following locations: Montpelier, Vermont; Albany, New York; West-

I LIQUID FUELS

-Propane
(continued)
-Kerosene

field, Massachusetts; York, Pennsylvania; and Auburn and Bangor, Maine. The Auburn facility has an on-site

storage capacity of 120,000 gallons, and Duke operates a joint venture with R.H. Foster in Bangor with a storage capacity of 60,000 gallons. Additional supplies arrive by truck (SPO 2002).

FACTORS CONTRIBUTING TO MAINE'S VULNERABILITY

- ◆ Limited number of suppliers. Any disruption to a single supply source could have significant impact.
- ◆ Heavy reliance on single delivery point. The majority of product arrives at a single facility by rail.
- ◆ Petroleum market fluctuations. Propane prices generally correspond with crude oil and natural gas prices because it is made from crude oil and natural gas.
- ◆ Just-in-time delivery. Like other petroleum products, propane is subject to the risks associated with just-in-time delivery.
- ◆ Commercial and industrial use. About 2.4 percent of Maine's commercial energy use and about 0.6 percent of industrial energy use relies on propane (EIA 2005).
- ◆ Weather-related vulnerabilities. Regional delivery capability may be impaired if storms close roads or ice blocks terminal access.
- ◆ Dependence on Canadian railroad deliveries.
- ◆ No legal or statutory mechanism for collecting data on propane deliveries.
- ◆ No communication protocol with Maine and regional propane terminals and dealers.
- ◆ Lack of information about increased demand for propane in the local business sector.
- ◆ Lack of real-time information to monitor freight movements in New England, Maine, and Canada.

iv. KEROSENE

There are two grades of kerosene: K-1 and K-2. K-2 is the most common and is used for space heating, domestic hot water, and wick-fed lamps. K-1 is a very low sulfur grade that is typically used in unvented heaters (unvented space heaters can be moved from room to room). Kerosene is often the fuel of choice for mobile homes because kerosene, unlike heating oil, does not congeal when stored outdoors at temperatures below freezing. In the commercial sector, kerosene is added to diesel fuel to keep it flowing at winter temperatures.

INFRASTRUCTURE AND DISTRIBUTION

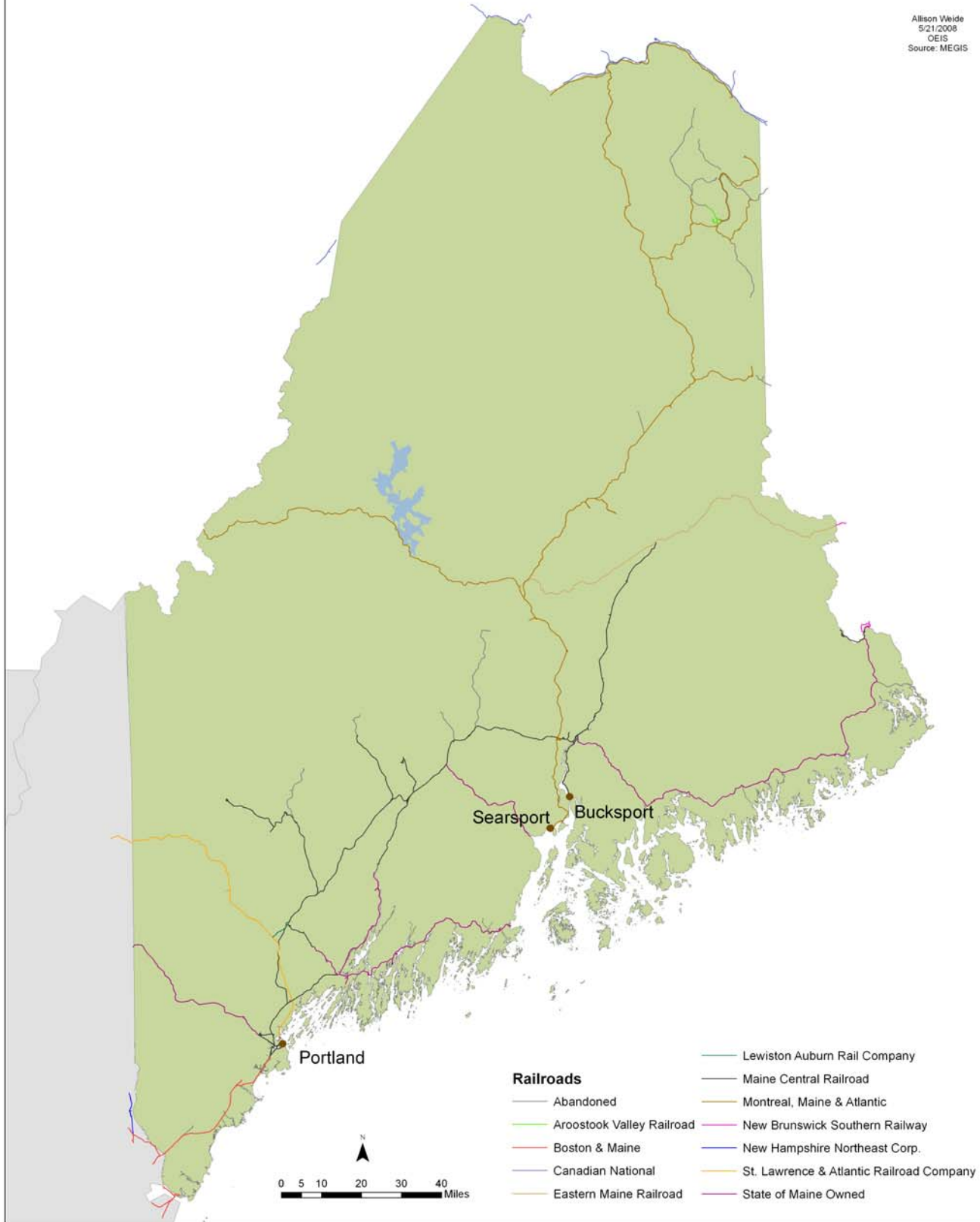
Kerosene is trucked from terminals that are supplied by barge or tanker. Three terminals currently supply kerosene in Maine, though the mix of products stored at particular terminals can change substantially and more (or fewer) terminals may handle kerosene at different times. Kerosene supplies are variable and fluctuate from month to month.

Factors Contributing to Maine's Vulnerability

- ◆ Market fluctuations and infrastructure limitations. As a petroleum-based product, kerosene is subject to many of the same supply, price, and distribution vulnerabilities as fuel oil and propane (see above).
- ◆ Percent of households served. About 39,600 Maine households, or about 5 percent of the population, heats with kerosene.
- ◆ Domestic dependency. Homes heated with kerosene often have no alternative heating source.
- ◆ Low-income households. Many kerosene users are lower-income households with less capacity to withstand price shocks.

Maine Ports & Railroads

Allison Weide
5/21/2008
OEIS
Source: MEGIS



II NATURAL GAS

In Maine, natural gas annual consumption for home heating is roughly 69,400 cubic feet per household and 1.46 billion cubic feet statewide. Four percent of the Maine population heats primarily with natural gas.

Maine and the rest of New England have become increasingly dependent on natural gas to generate electricity (approximately 60 percent of Maine's and 40 percent of the region's generating

capacity) and consequently increased pressure has been put on natural gas supplies. Decreasing Canadian supplies have driven many companies to propose construction of liquefied natural gas (LNG) facilities in Maine, New England, and Canada to meet the region's growing demand for natural gas. An LNG terminal has been permitted and is under construction in St. John, New Brunswick. Furthermore, because of the electric grid's dependence on this fuel, natural gas shortages take on added importance.

The natural gas business structure is very complex. Gas production resources, transmission systems, and local distribution systems are usually owned by different companies. The "gas utility" from which most customers buy product is often an LDC that may not have a contract that assures delivery of out-of-state gas supplies through interstate transmission pipelines. For this reason,

an LDC has a more limited range of options in reacting to a natural gas emergency than a vertically integrated utility does. But LDCs are required by law to have emergency plans to cope with gas infrastructure disruptions, and federal pipeline safety rules apply to both LDCs and interstate pipelines.

Emergency steps that gas companies take during a shortage include:

- ◆ Purchasing and transporting additional gas.
- ◆ Rerouting gas deliveries.
- ◆ Increasing withdrawals from storage.
- ◆ Increasing withdrawals from other operating system sources.
- ◆ Increasing pipeline pressure.
- ◆ Issuing public warnings and announcements.
- ◆ Requesting that customers voluntarily reduce gas demand.
- ◆ Arranging for import of compressed natural gas or liquefied petroleum gas.

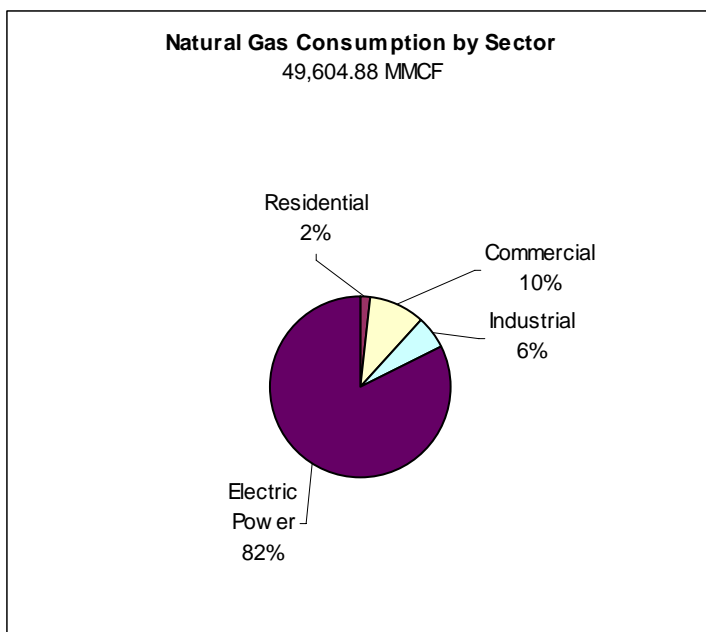


Figure 5. Natural gas use by sector (EIA)

- ◆ Interrupting selected customers.⁷
- ◆ Developing strong public/private relationships with the leaders in the natural gas production, transmission, and distribution industries;
- ◆ Implementing gas cutoffs.⁸
- ◆ Taking investigative and/or enforcement measures.

The manner in which a state agency works with a gas company depends upon the legal authorities in place. A state may:

- ◆ Review gas company emergency plans

II NATURAL GAS (CONTINUED)

- ♦ Review county and municipal natural gas emergency plans
- ♦ Make public warnings and announcements
- ♦ Assist in the arrangement of special gas purchase contracts
- ♦ Issue requests for a reduction in gas use
- ♦ Implement gas demand reduction measures at State facilities
- ♦ Declare a state of emergency
- ♦ Implement measures similar to those for petroleum emergencies
- ♦ Establish notification protocols
- ♦ Request federal assistance
- ♦ Take investigative and/or enforcement measures.

The curtailment plans in Maine are part of the LDC's tariff filing. Curtailment priorities are placed on protecting human health and safety and are implemented to ensure continued service to residential customers and other critical loads. With respect to natural gas for electricity generation, electric generators without contracts for firm gas supply will not have access to gas supply during shortage events, such as occurred in December of 2007.

INFRASTRUCTURE AND DISTRIBUTION

Because of system design, disruptions in delivery of natural gas for heating are less frequent than disruptions in electricity. Most local natural gas systems have multiple interconnection or rerouting capabilities buried underground. But when disruptions do occur, substantial risk to health and safety is possible. A break in a natural gas pipeline can cause an explosion or fire. A total loss of gas supply in a region can take weeks or months to repair and restore as crews must purge air from the entire system, re-pressurize it, and

then manually re-light all of the customers that have been shut off. A loss of gas in the winter can have immediate serious health impacts.

Most of the natural gas supplies used in the U.S. originate in the southern states of Texas, Louisiana, New Mexico, Oklahoma, Wyoming, and in the Gulf of Mexico as well as in Alaska and Canada. Most of the gas consumed in Maine originates from either western Canada or Sable Island. Gas is imported through high-capacity, high-pressure pipelines owned by interstate gas transmission companies. Within a state, gas is provided by a local distribution company (LDC) that operates intrastate and local service lines. An LDC may also rent or own gas storage facilities that are a crucial component of the gas supply system.

Two interstate natural gas pipelines cross the state of Maine:

1. The Maritimes & Northeast Pipeline (M&NE) runs through eastern, central, and southern Maine from Calais to Berwick. This regional international pipeline transports eastern Canadian gas from Sable Island, through Maine, and on to southern New England. Gas from this pipeline is accessed in Maine at two locations—one in the greater Bangor area and the other in Westbrook. This line is currently being upgraded to double its throughput capacity to carry anticipated liquefied natural gas (LNG) volumes from the Canaport LNG import facility in New Brunswick to U.S. markets to our south.
2. The Portland Natural Gas Transmission System (PNGTS) Pipeline runs through western Maine, transporting western Canadian gas from an interconnection with the Trans Canada pipeline in Quebec to the New England market. A

Maine Natural Gas Transmission

Allison Weide
5/21/2008
OEIS
Source: MEGIS, Maritimes & Northeast Pipeline



II NATURAL GAS (CONTINUED)

smaller lateral line provides gas service to Maine power plants located in Rumford and Jay. This line joins the M&NE line in Westbrook.

A third interstate pipeline, Granite State Gas Transmission Company (GSGT) connects Northern Utilities Inc. to the national gas grid to our south, affording Northern an alternate supply route. Northern can receive gas from M&NE from a connection in Lewiston and receives much of its supply from PNGTS through a gate station in Westbrook.

The regional supply of gas is augmented by the infusion of LNG delivered by ship to a Boston-area terminal where a portion is transported into Maine by truck to be introduced into the pipeline system. According to the Northeast Gas Association, LNG provides as much as 25 percent of the daily peak supply in winter and about 15 percent of New England's total gas supply in 2000.

Three local distribution companies provide gas supply to central and southern portions of the state using natural gas delivered via one of the transmission pipelines.

FACTORS CONTRIBUTING TO MAINE'S VULNERABILITY

Local distribution companies (LDCs) are regulated by the PUC, while the interstate pipelines are subject to federal regulation. Security is primarily a private-sector responsibility, with some input, oversight, and encouragement by regulators. LDC emergency plans are on file with the PUC. Interstate pipeline security plans are on file with the U.S. Department of Homeland Security's Transportation Security Administration (TSA).

Some other considerations:

- ◆ Infrastructure visibility. Gas infrastructure is usually highly visible and thus not a hidden target.
- ◆ Internet insecurity. Gas utilities increasingly use modern technology, including the internet, to monitor and control their facilities; the internet is far from secure and accessible globally.
- ◆ Limited access to pipeline security information. There is limited State access to (and knowledge of) interstate pipeline vulnerabilities and security plans.
- ◆ Limited access to federal information. To minimize inadvertent or unnecessary release of sensitive information about critical infrastructure, federal agencies and some utilities restrict information flow to States, complicating the State and local responsibility to provide initial response to emergencies.
- ◆ Insufficient deliverability on peak winter days. Currently, at the regional level, there is insufficient gas deliverability available on a peak winter day for non-firm contracts.
- ◆ Reliance on LNG during peak times. LDCs are heavily dependent on LNG during times of peak demand for natural gas. Demand for LNG continues to increase, deliverability is limited, and any disruption in deliveries could have significant price impacts.
- ◆ Electric generation dependence on natural gas. Electric generation plants generally have non-firm contracts, making them particularly vulnerable to price spikes and supply shortages.

III. Electricity

The electric power system carries numerous technical constraints that limit what can be done to prevent power outages. "The system also contains many automatic control devices that respond almost instantaneously to perturbations in supply, demand and other system conditions. Hence, some measures taken to prevent outages can actually increase risk and, in some cases, create cascading effects that can collapse the entire system in a matter of minutes. There have been enough episodes of this type of catastrophic, widespread, system failure to warrant care in the exercise of measures under emergency conditions."⁹

Electricity restructuring in Maine and in other regions of the U.S. has changed the way electricity is produced and sold. In many states, including Maine, utility-owned generating and transmission assets have been unbundled, creating separate generating and transmission/distribution entities. Generation is now owned by private entities and operates in a competitive market. Regulated transmission and distribution (T&D) utilities and State regulators have less impact on the electric utility since restructuring. Independent system operators (ISO)

or regional transmission organization (RTO) structures operate regional electricity grids. Many of the rules are administered by the Federal Energy Regulatory Commission (FERC). RTO/ISOs also operate market systems that solicit and price transactions for various services. As RTOs, they have real-time knowledge of the status of the electric system within their own and adjacent operating areas, including fuel type and supplies, power plant operational status, and predictive models that describe the reliability of

forecasted and current operations. They also have established emergency plans for dealing with conditions when the power system is stressed.

RTO/ISOs function as independent electric transmission operators, balancing

authorities and reliability coordinators for a single state or multi-state region. In the Northeast there are two RTOs: the New England ISO and the New York ISO. Both continually monitor our regional system needs and resources. In the event of an identified situation that prevents the system from operating reliably, it will declare a system emergency. When time permits, announcement of a system emergency is typically preceded by a system alert and a system warn-

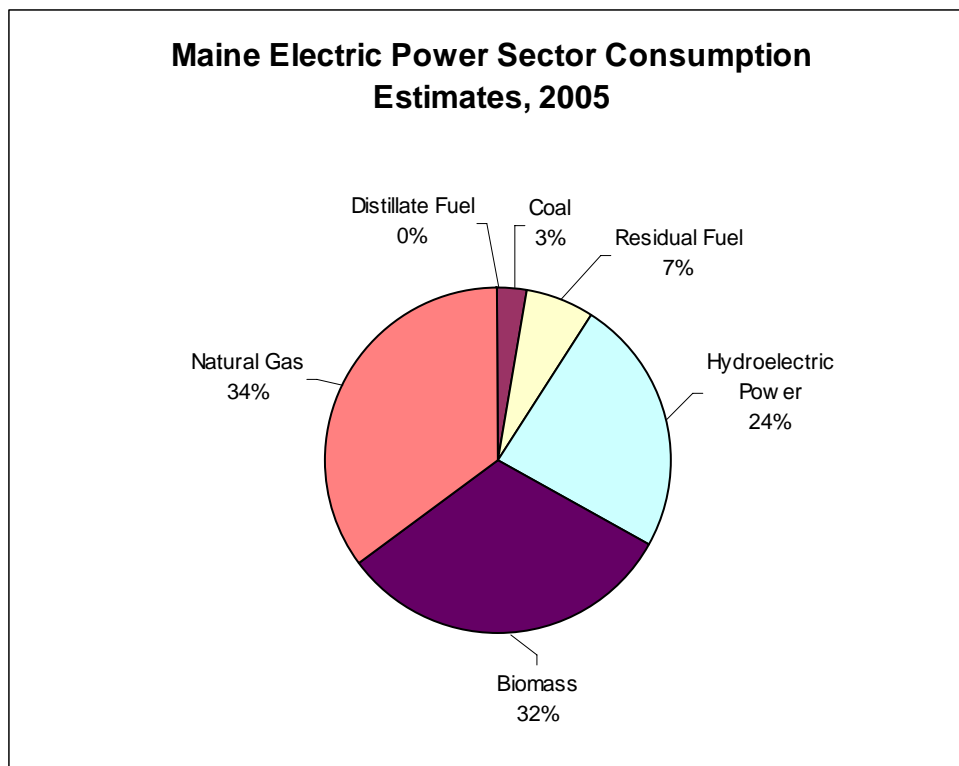


Figure 6. Electric Power Consumption by Sector (EIA)

III. Electricity (CONTINUED)

ing. The following are generic response measures that may be taken by the RTO/ISOs in the event of an elec-

tricity emergency:

- ♦ Curtailing outside sales of power or increasing power imports
- ♦ Modifying the operation of generating units for emergency relief
- ♦ Asking selected customers to reduce their load, either voluntarily or with controlled active load management
- ♦ Asking all customers to voluntarily implement active load reductions
- ♦ Reducing voltage
- ♦ Implementing controlled rotating interruptions

The manner in which a state agency works with an RTO/ISO in the implementation of some or all of these measures depends on the legal authorities in place. In most instances, a cooperative working relationship exists, as no state has legal authority over an RTO/ISO. The usual arrangement is for the RTO/ISO to develop collaborative working protocols that keep states informed under any system-wide emergency condition identified by the regional power entity. ISO New England, the RTO for Maine, has a detailed set of operating procedures that it follows in the event of a short-term capacity deficiency (OP-4), a long-term energy emergency (OP-21), or acute emergency (OP-7). Communication with state agencies, including the PUC, OEIS, MEMA, and Governor's Office, is an essential component of ISO New England's procedures. ISO New England's OP-10 establishes communications protocols within the context of emergency incidents and disturbances. In addition, all relevant state agencies keep copies of all of the RTO/ISO website addresses and ensure that the RTO/ISO state agency

representatives exchange and maintain current and 24-hour contact names, data, and essential communications devices.

The relevant ISO-NE operating procedures are attached as an appendix to this report. In the event of an electricity emergency, ISO-NE informs the appropriate state agencies and refers to these response procedures:

- ♦ Monitor Conditions
- ♦ Issue public warnings and announcements
- ♦ Assist in the Arrangement of special electricity purchase contracts
- ♦ Issue public request for load reduction
- ♦ Implement load reduction measures at State facilities
- ♦ Governor declares a state of emergency

The Governor's Energy Emergency Powers include the authority to act according to 37-B MRSA §742. See Section III, below:

- ♦ Issue public warnings and announcements
- ♦ Impose restrictions on the hours during which commercial, industrial, public, and school buildings may be open
- ♦ Impose restrictions on lighting levels in commercial, industrial, public, and school buildings
- ♦ Impose restrictions on interior temperature in commercial, industrial, public, and school buildings
- ♦ Impose restrictions on the use of display and decorative lighting
- ♦ Require mandatory interruption of selected customers
- ♦ Grant waivers to utilities that have generators operating at less than their technical limits due to environmental or other restrictions
- ♦ Start up state-owned backup generators to provide additional capacity

III. Electricity (CONTINUED)

- ◆ Direct utilities to use pre-determined customer restoration priority lists to the degree the physical distribution

system permits

- ◆ Request federal assistance when State resources are overwhelmed
- ◆ Take appropriate investigative and enforcement measures

INFRASTRUCTURE AND DISTRIBUTION

Electric power in Maine is sold by largely de-regulated power providers in competition with one another. The delivery of power over transmission and distribution lines is a monopoly service provided by distribution companies and regulated by the PUC. Maine distribution companies include three investor-owned utilities and ten consumer-owned utilities. Significant amounts of electricity are imported over international federally regulated international transmission lines from New Brunswick and exported to the rest of New England over federally regulated interstate transmission lines into New Hampshire.

Maine's Transmission and Distribution (T&D) utilities are required by law to provide safe, reasonable, and adequate facilities and service. As a result, they are responsible for system security and for system restoration during emergency events. The PUC provides support and collaborates with utilities, industry organizations, and others on security issues. T&D system emergency plans are on file with the PUC. Access to generation facility security plans is at the discretion of the generation company.

Except in the northeastern part of the state, Maine T&D utility systems are part of the New England Power Pool (NEPOOL). The Independ-

ent System Operator for NEPOOL (ISO New England) is responsible for regional system reliability and has an established procedure for when the regional system is faced with energy shortages. One of the first steps of the procedure, known as OP4 (Operating Procedure 4) includes voluntary conservation measures and emergency power purchases. The next actions involve reduced operating reserves and voltage reductions. The final actions are radio and TV appeals for conservation (power warnings), and in extreme circumstances ISO-NE may request that the message be personally reinforced by state governors. ISO New England also has a confidential system in place to communicate high-security messages to all power plants, many participants, and neighboring control centers.

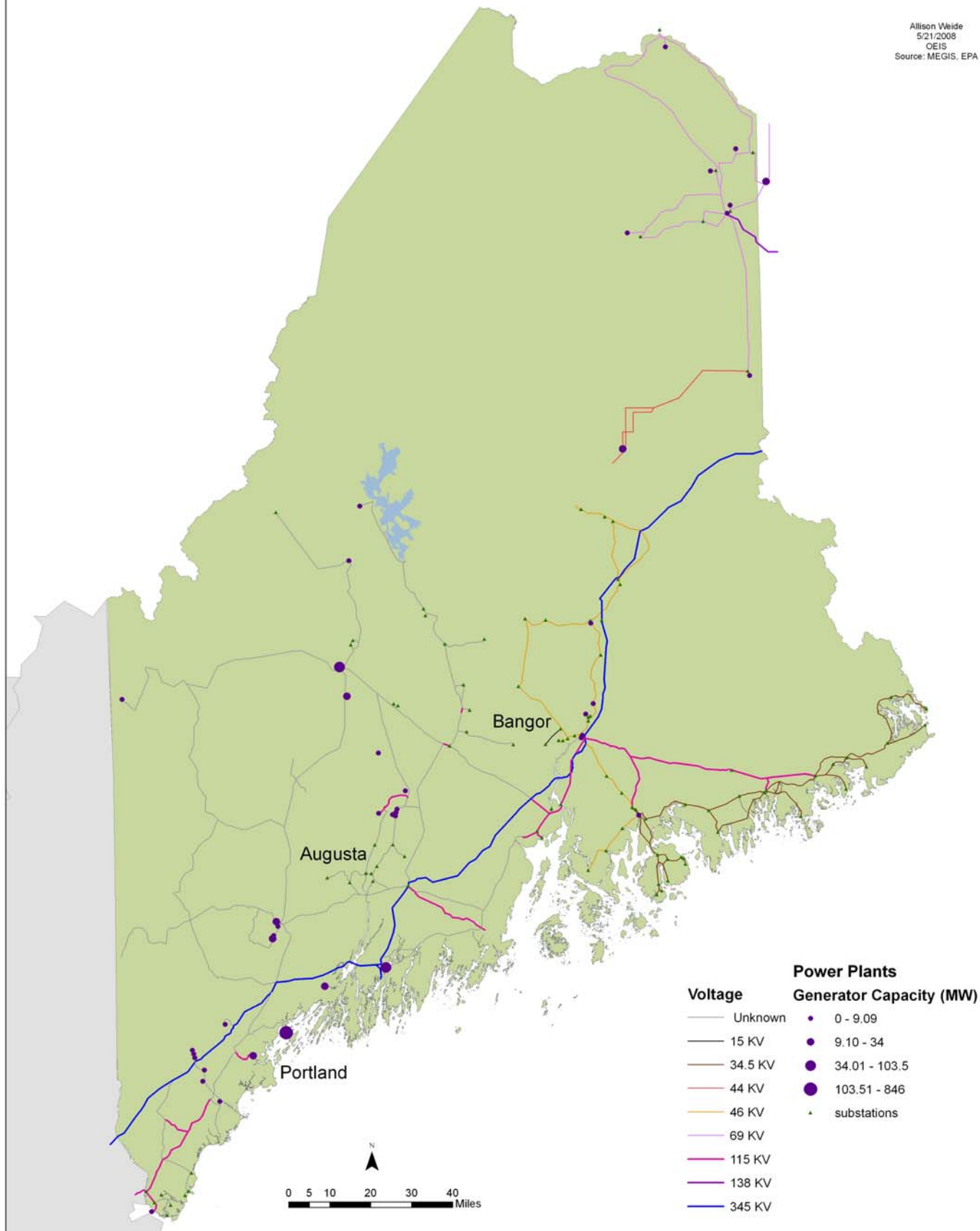
Maine T&D utility systems in northeastern Maine are not directly connected to NEPOOL, but operate as part of the Maritimes Control Area and both generates power locally and receives power through transmission facilities owned by New Brunswick Power Company. As a result, market conditions in Northern Maine can vary substantially from market conditions elsewhere in New England.

FACTORS CONTRIBUTING TO MAINE'S VULNERABILITY

- ◆ Vital services' dependence on electricity. Electricity is used throughout the state for residential, commercial, and industrial purposes. Electric power keeps security and communication systems, life-support systems, and computers operating. Any interruption in electricity can have immediate impact on vital services.
- ◆ Infrastructure visibility. Electricity infrastructure is usually highly visible and thus not a hidden target.

Maine Electricity Generation & Transmission

Allison Weide
5/21/2008
OEIS
Source: MEGIS, EPA



III. Electricity (CONTINUED)

- ♦ Internet insecurity. Utilities increasingly use the internet to monitor and control their facilities, and the

internet is accessible globally and far from secure.

- ♦ Reliance on competitive markets. Since implementation of electric industry restructuring in March 2000, prices for electric generation have been determined through competitive markets.
- ♦ The regional supply's dependence on natural gas. Regional electric generating capacity is increasingly dependent on the availability and deliverability of natural gas. Most new generating plants are gas-fired. While some of these plants are dual-fuel design, in practice they do not have the capability on site to use a second fuel (e.g. no on-site storage tanks for fuel oil). In the event of a major natural gas supply disruption, there would likely be a significant cascading effect on the price and availability of electricity.
- ♦ Northern Maine's dependence on New Brunswick. Northern Maine's electricity supply (and associated price) depends in large part on New Brunswick Power's policies and supply situation.
- ♦ The effect of fossil fuel prices. Oil and natural gas are used to generate the majority of electricity in the region, and they set the market clearing price about two-thirds of the hours. As prices for these and other petroleum products increase, electricity prices increase.
- ♦ Limited access to information on critical infrastructure. To minimize inadvertent or unnecessary release of sensitive information about critical infrastructure, federal agencies and some utilities restrict information flow to states, complicating State and local responsi-

bility to provide initial response to an incident that challenges local infrastructure.

- ♦ Limited access to generation security information. Security plans for electric generation plants are a private-sector responsibility and are generally proprietary and confidential. They are generally not made available to emergency managers.

Note: A number of factors contribute to Maine's electrical security:

- ♦ In Maine, local supply exceeds demand. Maine has an electric generating capacity that is nearly twice its peak demand. While much of Maine's generating capacity serves out-of-state demand, the physical proximity of Maine consumers to excess supply increases local system reliability.
- ♦ Utility system security is a private sector responsibility pursuant to federally mandated national standards, with limited input from the PUC. Utility plans are filed with, ISO-NE, NERC, FERC, NPCC, and Homeland Security but are not regulated per se.
- ♦ Mutual aid. Electric utilities have responsive mutual aid systems. When a geographic area suffers extensive damage, electric utilities in adjacent areas with available repair crews will send those crews to assist with service restoration. The Governor could facilitate the delivery of mutual aid by declaring an emergency and waiving hours of service requirements.
- ♦ To a significant degree, electricity emergencies can be averted through sustained public education and energy conservation measures (mitigation) as witnessed in winter 2003-04 when rolling blackouts were predicted by the ISO but never occurred. Informed behavior can result in positive effects and the adage applies that "the easiest megawatt to generate is the one that isn't used."

VII. REFERENCES FOR ADDITIONAL INFORMATION

A list of basic references for energy resource information is provided in Appendix C. It is assumed, however, that the Governor's Office of Energy Independence and Security will be the best current information resource, especially for contacts appropriate to a particular situation. Because contact information can change quickly, it is not provided as part of this plan.

The OEIS, PUC, MEMA, the members of the ERC and the U.S. Department of Energy's Energy Information Administration are important sources of more detailed information on Maine's energy resources:

- ♦ Energy Resources Council energy information website. Links to State, federal and industry websites with energy information relevant to Maine will be provided from the Energy Resources Council website:
www.maineenergyinfo.com/resourcescouncil.html
- ♦ Information on energy resources critical to Maine's energy security is maintained at the Governor's Office of Energy Independence and Security, MEMA and the PUC. An inventory of the state's major energy facilities as well as site-specific security issues and plans is available on a need-to-know basis from the OEIS, MEMA and the PUC. GIS data on primary energy infrastructure is being developed by the OEIS in conjunction with Maine Oil Dealers, MEMA, and the Northeast Gas Association. The PUC maintains current, detailed GIS data on Maine electric and natural gas transmission and distribution systems, available for reference in the State Emergency Operations Center, and the PUC maintains an emergency contact list for Maine utilities and some other key energy facilities.
- ♦ Current information on winter heating fuels inventories and prices is available seasonally from OEIS. OEIS monitors terminal inventories, reporting to the legislature periodically as requested. Heating fuel prices are surveyed during October through March, calculated and published on a weekly basis during the heating season. These reports and annual season summary reports to the DOE/EIA are available at www.maineenergyinfo.com or by request through the OEIS.
- ♦ Information on Maine's primary energy use by fuel type is available from the U.S. Department of Energy's Energy Information Administration. The most recent update of the "State Energy Data Report" published biannually by Energy Information Administration can be found at www.eia.doe.gov/pub/state.data/pdf/me.pdf. [http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=ME contains more recent data]
- ♦ Information on petroleum industry security is available from the American Petroleum Institute (API). API has a lead role in interfacing with key government agencies and disseminating government intelligence concerning potential acts of terrorism to the industry. API will provide this role until a newly formed Energy Information Sharing and Analysis Center (ISAC) can take over this function. In addition, API's confidential March 2002 publication "Security Guidance for the Petroleum Industry, which provides information on security procedures at petroleum facilities, is available at MEMA on a need-to-know basis. API's website is www.api.org.
- ♦ Maine Home Heating Report 2007
- ♦ Year-round heating oil and gasoline prices are available through Chris Brown at www.maineoil.com.

VII. REFERENCES FOR ADDITIONAL INFORMATION (CONTINUED)

- ◆ Various regional energy security efforts and associated information sources may be relevant for Maine's

energy emergency preparedness. Examples are provided below, though these are for illustrative purposes only. The list will change over time.

- ◆ The National Association of State Energy Officials has proposed to develop a "Northeastern States Coordinated Energy Emergency Preparedness Plan." This plan would identify the various regional import portals and their relative vulnerability as well as the interstate movement of resources and the impacts of various emergency measures taken by individual states.
- ◆ The National Association of State Energy Officials and the National Association of Regulatory Utility Commissioners developed "State Energy Assurance Guidelines," updated in November 2005, to serve as a template to facilitate state energy emergency planning.
- ◆ The Independent System Operator for New England (ISO New England) identifies electric system vulnerabilities on an ongoing basis, including vulnerabilities in the gas system on which the electric system depends. A study released in early 2002 addressed system vulnerabilities and system restoration priorities and protocols.
- ◆ Another ISO study released in August 2005 entitled, "Power Generation and Fuel Diversity in New England," concluded that it is crucial for stakeholders in New England and wholesale electric and gas markets to identify resource needs and chart a course to ensure reliability of these interdependent systems and to secure the region's energy future.
- ◆ The ISO New England State of the Market Report, 2004 concluded that the January 2004 cold snap experience led to important market improvements in communication and that additional demand response is needed.
- ◆ Dark Storm Northeast-Mid-Atlantic States Energy Assurance Exercise- June 19-20th 2007 websites-www.NEAssurance.govtools.us
- ◆ Other New England States have energy emergency plans and protocols in place, some of which are on file at MEMA.
- ◆ Terrorist Incident Appendix to the State of Maine Emergency Operations Plan, MEMA, March 2002.
- ◆ Security Guidance for the Petroleum Industry, API, April 2002

Copies of particular studies of importance to Maine are available from the PUC.

VIII. PLAN ADEQUACY AND MAINTENANCE

This plan defines a process for facilitating information and coordination during the period leading up to a potential energy emergency. It provides basic information on Maine's energy resources and examples of their vulnerabilities. Because potential energy emergency situations are varied and dynamic, no one plan could anticipate the universe of possible scenarios and appropriate responses in advance. In effect, the plan is a vehicle for identifying resources that can be brought to bear in a crisis situation and for establishing a task force framework so that those resources can be efficiently and effectively assembled, when needed. The plan can not and should not be relied upon as a comprehensive or exhaustive reference for all potential actions, scenarios or responses.

A. RESPONSIBILITIES

No agency currently has specific responsibility for maintaining this plan, although it is logically within the purview of both the Maine Emergency Management Agency and the Governor's Office of Energy Independence and Security, with informational assistance from the member agencies of the Energy Resources Council. It is anticipated that plan updates will be a cooperative effort as was development of this plan.

To improve Maine's energy emergency preparedness, several areas for potential improvement have been identified:

1. GIS information. There is an incomplete GIS data set for key energy infrastructure in Maine and for regional infrastructure on which Maine depends. The OEIS will work in conjunction with the PUC, MEMA, Maine Oil Dealers, to build this information over time. The PUC maintains current, detailed GIS data on Maine's

- ♦ MEMA is responsible for the maintenance of the State Emergency Operations Plan.
- ♦ Individual agencies are responsible for various existing programs and protocols referenced in this plan.
- ♦ The ETF should be activated at least every two years to evaluate the currency of the Plan and the resources it references, and to assist with updates.

B. DEFICIENCIES

There may be deficiencies noted in this plan. All deficiencies noted should be reported to MEMA and communicated to the staff of the Energy Resources Council. If MEMA deems the deficiencies sufficiently significant, MEMA or the Energy Resources Council will request that the ETF be mobilized to address the deficiencies.

C. UPDATE AND REVISION PROCEDURES

Comments on this plan will be received at all times. Any comment or question should be directed to OEIS and MEMA and copied to Energy Resources Council staff. Suggestions are welcomed and will be carefully considered in the preparation of future amendments.

electric and natural gas transmission and distribution systems that can be used for reference at the State Emergency Operations Center.

2. Access to information on private sector preparedness. For some types of energy facilities, there is little or no access to security plans by emergency officials. Security planning is left to industry discretion and State government access to information will continue to depend on trust and goodwill.

IX. POTENTIAL ISSUES AND ACTIONS

To improve Maine's energy emergency preparedness, several areas for potential improvement have been identified:

1. GIS information. There is an incomplete GIS data set for key energy infrastructure in Maine and for regional infrastructure on which Maine depends. The OEIS will work in conjunction with the PUC, MEMA, Maine Oil Dealers, to build this information over time. The PUC maintains current, detailed GIS data on Maine's electric and natural gas transmission and distribution systems that can be used for reference at the State Emergency Operations Center.

2. Access to information on private sector preparedness. For some types of energy facilities, there is little or no access to security plans by emergency officials. Security planning is left to industry discretion and State government access to information will continue to depend on trust and goodwill.

3. Natural gas emergency preparedness. Given increasing federal concern about emergency preparedness related to natural gas infrastructure reconstruction and fuel allocation, it may be beneficial to consider the extent of State authority and whether sufficient authorities exist to address emergency situations that emerge.

4. Training drills. Because potential energy task force members will change periodically and there is a learning curve with energy emergency preparedness and response, it may be beneficial

to undertake periodic training drills based on mock energy emergencies. Maine-specific exercises on several levels have proven very helpful in the past. Such drills might also identify potential areas for improvement in this plan. Federal grant funds may be available for energy emergency training sessions.

5. Periodic preparedness meetings. Potential ETF members might benefit from periodic educational meetings to discuss Maine's various energy resources and potential vulnerabilities. Meetings could include both public and private sector participants and would be valuable for sharing information, identifying potential hazards and updating contacts.

6. Liquid Fuels Energy security. Strategies to reduce the risks of energy emergencies include promotion of energy efficiency and fuel diversity in addition to at least a couple of other categories including; security of critical infrastructure and improved insurance of local supply availability. For liquid fuels the Homeland Security Council is the oversight body for looking at physical security infrastructure issues and the State Planning Office/Office of Energy Independence and Security is responsible for monitoring heating fuel supplies.

7. Propane Supply Assurance. Require legislation mandating bi-weekly propane supply reports to the State Planning Office just like other liquid fuels.

X. AUTHORITIES AND REFERENCES

The following section lists applicable state and federal authorities that may be used or guide a response during an energy emergency. In addition to these state and federal authorities, individual state and federal agencies may also have the authority or be given the authority to waive certain rules and regulations during an energy emergency.

A. STATE REFERENCES

For a list of many energy-related resources and authorities in Maine by state agency refer to the 2003 Directory of State Energy Programs and Resources at www.maineenergyinfo.com/docs/Directory.pdf. In addition, the following references are particularly relevant to energy emergency preparedness and response:

- ♦ Energy Emergency Proclamation (37 MRSA 742). The Governor has authority to proclaim an energy emergency and, in cases of an emergency, powers to implement or waive certain programs, standards, priorities and quotas.
- ♦ Profiteering in Necessities Act (10 MRSA §1105). Prohibits price gouging in the event of extreme market dislocation (e.g. during an energy shortage.)
- ♦ Maine Unfair Trade Practices Act, 5 MRSA §§205-A-214)under which the Attorney General must prove that the challenged pricing was “unconscionable excessive.”
- ♦ An Act to Provide for the Security of Certain Utility Information (35-A MRSA §1311B). This Act allows the Public Utilities Commission to restrict access to specific information about public utility operations that could compromise the security of public utility systems and to release that information to other State agencies for use in emergency preparedness or response, law enforcement and other public health and safety activities.
- ♦ Maine Monopolies and Profiteering Law, (10 MRSA §§1101-1109) prohibits abuse of monopoly power, price fixing and other unreasonable restraints of trade, among other things.

B. FEDERAL REFERENCES

- ♦ Defense Production Act (1950) – The President has broad authority to allocate materials (including petroleum) and facilities as necessary and appropriate to national defense.
- ♦ Energy Policy and Conservation Act (P.L. 94-163, 1975) – The President has authority to place limits on exports of energy supplies and to increase production rates from wells on federal lands and (subject to conditions) on state lands.
- ♦ Executive Order 12656 (1975) – The order assigns US DOE with major responsibilities for policy making and a coordinating role within the federal government for energy emergency preparedness and strategy.
- ♦ Export Administration Act (EAA, 1979) – Export controls may be placed on petroleum products to protect national resources or to further foreign policy interests.
- ♦ State Energy Efficiency Programs Improvement Act (1990) – The Act amends the Energy Policy Act of 1975 to require states receiving federal assistance to submit an energy emergency planning program to the Secretary of Energy. It also increases the SPR to one million barrels.
- ♦ U.S.-Canadian Free Trade Agreement (1988) – The agreement eliminates many restrictions on trade between the United States and Canada. Among other things, Canada agreed not to limit exports of natural gas to the U.S. in a crisis, except when Canadian consumers would be curtailed.

**X. AUTHORITIES
AND REFERENCES
(CONTINUED)**

In addition, the following federal regulations may be relevant in some situations:

- ◆ Facility Response Plans (marine transportation) (59 FR 34070).
- ◆ Facility Response Plans for Pipelines (62 FR 13991).
- ◆ Escorts for Certain Tankers (59 FR 42962).
- ◆ Establishment of Double Hull Requirements for Tank Vessels (60 FR 13318).
- ◆ Facility Response Plans for Marine and Non-Marine Transportation Facilities (61 FR 7890).
- ◆ National Contingency Plan Revisions (59 FR 47384).

NOTES

1. Technical Assistance Briefs: Utility and Network Interdependencies: What State Regulators Need to Know, April 2005, prepared for NARUC by the Institute of Public Utilities
 2. Including; promotion of flex-time work scheduling, telecommuting, teleconferencing, carpooling, vanpooling, use of mass transit and public transportation systems to minimize travel, enforcement of highway speed limits, encouragement of reductions in propane fueled space heating and non-essential industrial processes requiring either propane, diesel, fuel oil or other liquid fuel. Assist low income customers in getting emergency supplies and work with industry associations to get support for proposed measures to reduce demand.
 3. By facilitating the movement of petroleum products to areas where they are essential to health and welfare either by granting federal and state driver waivers on deliveries of petroleum products or coordinating with state highway and police units. Act as a liaison among industry and terminal operators to facilitate communications and verify requests for assistance, reduce demand at state-owned facilities, request waivers from EPA for import and use of motor gasoline that does not meet local air quality requirements and work through DOE to obtain Jones Act waivers for import of petroleum products on non-US flag vessels.
 4. Declare a State of Emergency that allows implementation of mandatory measures such as allocation in a fair and equitable way. This can be done by allocating supplies as a percentage of contractual volumes or based on prior years actual purchases. Suppliers should not be able to discriminate within a class of accounts to give priority to one user over another. It may be necessary to employ provisions of the Uniform Commercial Code, establish a priority end-user program or if supplies will be disrupted for months, a state set-aside program may be implemented.
 5. Maine Whole House Energy Efficiency Program Implementation Plan, OEIS/SPO, Feb.2006, page 7
 6. Maine Whole House Energy Efficiency Program Implementation Plan, OEIS/SPO, Feb.2006, page 7
 7. Customers who have contracted for interruptible gas service allow the LDC to cut their supply in times of high demand. These interruptible arrangements, which provide significant financial incentives or lower prices, usually require advance notice of interruption and limit the total number of hours in a year that service can be interrupted. Interruptible customers must have fuel switching capability, usually to either #2 distillate fuel oil or LPG. Approximately 10% of Maine's installed capacity is dual-fuel compared to dual-fuel capacity of 18% in New England.
 8. This is a last resort measure to avoid loss of pressure to the entire system. Because of the extensive effort required to restore service and relight all customer pilot lights, this measure is rarely implemented. Which customers are cut-off is determined by the configuration of the gas network and on customer priorities. Every effort is made to maintain service to residential customers and special facilities (hospitals) and to impose cutoffs on lower priority customers. The configuration of a gas system sometimes causes customers at the end of radial pipelines to lose service first, independent of their priority status. Generally, customers interrupted by the imposition of this measure do not receive compensation.
- State Energy Assurance Guidelines, NASEO/NARUC, Version 2, November 2005

Appendix A

Governor's Emergency Powers

Energy Emergency Declaration

Maine law gives the Governor broad powers for managing an energy emergency. Title 37-B MRSA §742 allows the Governor to take action after finding that an "actual or impending acute shortage of usable energy resources threatens the health, safety and welfare of the citizens of the state". By declaring an energy emergency in any or all regions of the state, the Governor can:

- (1) Establish and implement programs, controls, standards, priorities and quotas for the allocation, conservation and consumption of energy resources;
- (2) Regulate the hours and days during which non-residential buildings may be open and the temperatures at which they may be maintained;
- (3) Regulate the use of gasoline and diesel-powered land vehicles, watercraft and aircraft;
- (4) After consulting, when appropriate, with the New England Governors, and upon the recommendations of the Maine Public Utilities Commission, regulate the generation, distribution and consumption of electricity; [see AG memo in Appendix B below]
- (5) Establish temporary State and local boards and agencies;
- (6) Establish and implement programs and agreements for the purpose of coordinating the emergency energy response of the State with those of the Federal government and of other states and localities;
- (7) Temporarily suspend truck weight and size regulations, but not in conflict with Federal regulations;
- (8) Regulate the storage, distribution and consumption of heating oil.

All regulations issued by the Governor will remain in effect for ninety days. "In the event that any order, rule or regulation issued by the Governor is to be in effect for longer than 90 days the Governor shall, before the 80th day following [its issuance], convene the Legislature." (37-B MRSA § 742.)

Emergency Declaration (non-emergency-specific)

Title 37-B MRSA §742 allows the Governor to declare a state of emergency "Whenever a disaster or civil emergency exists or appears imminent". Such declaration will "activate the emergency preparedness plans applicable to the affected areas and shall be the authority for the deployment and use of any forces or resources to which the plan or plans apply". Under a state of emergency, the Governor may:

- (1) Suspend the enforcement of any statute prescribing the procedures for conduct of state business, or the orders or rules of any state agency, if strict compliance with the provisions of the

statute, order or rule would in any way prevent, hinder or delay necessary action in coping with the emergency;

(2) Utilize all available resources of the State Government and of each political subdivision of the State as reasonably necessary to cope with the disaster emergency;

(3) Transfer the direction, personnel or functions of state departments and agencies, or units thereof, for the purposes of performing or facilitating emergency services;

(4) Authorize the obtaining and acquisition of property, supplies and materials pursuant to section 821;

(5) Enlist the aid of any person to assist in the effort to control, put out or end the emergency or aid in the caring for the safety of persons;

(6) Direct and compel the evacuation of all or part of the population from any stricken or threatened area within the State if necessary for the preservation of life or other disaster mitigation, response or recovery;

(7) Prescribe routes, modes of transportation and destinations in connection with evacuations;

(8) Control ingress and egress to and from a disaster area, the movement of persons within the area and the occupancy of premises therein;

(9) Suspend or limit the sale, dispensing or transportation of alcoholic beverages, firearms, explosives and combustibles;

(10) Make provision for the availability and use of temporary emergency housing;

(11) Order the termination, temporary or permanent, of any process, operation, machine or device which may be causing or is understood to be the cause of the state of emergency for which this proclamation was made; and

(12) Take whatever action is necessary to abate, clean up or mitigate whatever danger may exist within the affected area.

Appendix B

Potential Limits on State Authority

Memo from the AG's Office March 30, 2007

**OFFICE OF THE
ATTORNEY
GENERAL**

Consumer Protection Division Phone: 626-8854
6 State House Station FAX: 624-7730
Augusta, Maine 04333-0006 email: francis.ackerman@Maine.gov

Memorandum

To: *Betsy Elder, Office of Energy Independence & Security*
From: *Francis Ackerman, Assistant Attorney General*
Pc: *Linda Conti, Chief, Consumer Protection*
 Kathi Peters, Research Assistant
Date: *March 30, 2007*
Subject: *Limitations on state remedial powers in energy emergency*

In the context of your compilation of a draft revised Energy Emergency Plan for the State, you have asked that I address the scope of and limitations on the remedial powers available to the State in an energy emergency. This memorandum responds to your request.

Proclamation of energy emergency. An “energy emergency” is defined by law as “an actual or impending shortage in energy resources” that “threatens the health, safety or welfare of citizens.” When such an emergency arises, the Governor is required to issue a proclamation declaring its existence in the State or any section of the State. Upon issuance of the proclamation, the Governor may exercise the emergency powers enumerated in 37-B MRSA sec. 742 (2) (B).

At least two of the powers listed in the cited provision are subject to limitations affecting the scope of the Governor’s remedial options.

Limitation on emergency electricity regulation. In particular, the Governor’s ability to “regulate the generation, distribution and consumption of electricity” (subsection [4] of the cited provision) is circumscribed by the preemptive effect of the Federal Power Act, 16 USC sec. 824 *et seq.*, which reserves the power to regulate generation facilities in interstate commerce to the FERC. FERC jurisdiction does not, however, extend to facilities that produce power solely for the intrastate market. 16 USC

sec. 824 (b) (1).

In practice, this means that the Governor's regulatory power under the statute would extend only to facilities not connected to the New England grid. This would include: (a) facilities in northern Maine (which is not currently connected to the New England grid except indirectly through New Brunswick; (b) private facilities not connected to the New England grid; and (c) facilities situated on any portion of the grid that becomes temporarily disconnected from the New England grid.

Limitation on emergency regulation of home heating oil storage, distribution.

A similar analysis applies with respect to the Governor's power to regulate the storage and distribution of home heating oil (subsection [8] of sec. 742 [2] [B]). Here, the limits are set by the dormant Commerce Clause, which has been interpreted to confer the power to regulate interstate commerce exclusively upon Congress. Under this doctrine, the Governor may not validly regulate the storage or distribution of home heating oil in the stream of interstate commerce, *i.e.*, when it is destined for interstate shipment. *See, e.g., Ben Oehrlens & Sons & Daughter v. Hennepin County*, 115 F3d 1372 (8th Cir. 1997), *cert. denied*, 522 US 1029 (1997). However, he may validly regulate storage and distribution that is confined to the State, and does not accommodate or displace product destined for out-of-state shipment.

Price controls as a remedial option. Under existing law, the Governor does not possess the power to address price spikes or volatility in petroleum markets by imposing price controls. Without discussing either the need or the advisability of endowing the State's chief executive with this power, I pause only to note that if such a power were provided, it would be subject to the same limitations discussed above.

Applicability of antitrust provisions. Although energy prices in Maine, as elsewhere in the United States, are generally unregulated, this does not mean that anything goes in the State's energy markets. The Attorney General possesses the ability to initiate enforcement action against any party engaging in collusive price-fixing, market allocation or any other "unreasonable restraint of trade." He may also prosecute a party possessing monopoly or quasi-monopoly market power for abuse of that power, or for oppressive or exclusionary practices. 10 MRSA sec. 1101, 1102. These provisions apply regardless of whether an emergency exists.

Profiteering or price-gouging provisions. Finally, under the newly refurbished Profiteering in Necessities law, 10 MRSA sec 1105, the Governor may determine that a natural catastrophe or man-made event has interrupted the operation of normal competitive forces in a given market, causing an "abnormal market disruption". If the Governor proceeds to issue a declaration to this effect, the Attorney General may initiate appropriate enforcement.

Maine's profiteering law allows the Attorney General to prosecute so-called "price-gouging" only when (a) the Governor has declared an abnormal market disruption; and (b) the price of an affected good or service has increased by at least 15% over the sum of the prior price and any increased costs. Accordingly, it is important for the Governor and the Attorney General to remain in close contact and to coordinate decision-making under the profiteering law in an incipient energy emergency

AG as market monitor. Finally, regardless of whether an emergency exists, the Attorney General plays a role as monitor of home heating oil and motor fuel markets under the Petroleum Market Share Act, 10 MRSA sec. 1671 *et seq.* This requires him to remain in contact with market participants to ensure that he receives current information. As a result of this monitoring function, the Attorney General can help maintain lines of communication between the public and private sectors, while continuing to fulfill his constitutional role as the State's chief law enforcement officer.

Please let me know if you have any further questions.

FA/zap

Appendix C

Energy Information References

ENERGY TYPE	SOURCE	WEBSITE	PHONE	DATA
Energy – all types	U.S. Department of Energy Information Administration	www.eia.doe.gov/emeu/states/states	202-586-8800	Primary energy use
	Energy Resources Council Energy Information Website	www.maineenergyinfo.com/resourcesouncil www.maineenergyinfo.com	207-775-6728	Links to State, federal and industry websites with energy information relevant to Maine
Electricity	ISO New England	www.iso-ne.com	413-535-4069	Transmission system and market operations, regional generating facilities
	Maine Public Utilities Commission	www.maine.gov/mpuc	207-287-3831	Electricity and gas prices, GIS information, utility emergency plans, infrastructure data and maps, and contact information for key facilities
	Northern Maine Independent System Administrator Independent Energy Producers of Maine	www.nmisa.com	207-992-4724 207-626-0730	Operations and outage information Maine independent power plants capacity and operating status
Natural Gas	American Gas Association	www.aga.org	202-824-7000	National data
	Northeast Gas Association	www.northeastgas.org	781-455-6800	Regional system data including consumption by state and see
Petroleum/Fuels	Maine Public Utilities Commission	www.maine.gov/mpuc	207-287-3831	Regulates in-state natural gas distribution.
	American Automobile Association	www.aaa.com	800-222-3395	Transportation fuel prices
	American Petroleum Institute	www.api.com	207-622-5881	
	Maine Oil Dealers Association	www.meoil.com	207-729-5298	Market and dealer information
	Office of Energy Independence and Security	www.maineenergyinfo.com	207-287-8927	Heating fuels inventory and prices (annual overview), heating fuel prices (weekly), petroleum industry contacts
State Demographics	State Planning Office	www.maine.gov/spo	207-287-8927	Census data
State and Regional Energy Officials	Coalition of Northeast Governors		202-624-8450	Federal policy developments
	National Association of Regulatory Utility Commissioners	www.naruc.org	202-898-2200	

Comment [C1]: Why is MPUC listed as an electricity resource but not a natural gas resource?

National Association of State Energy Officials	www.naseo.org	703-299-8800	
New England Conference of Public Utility Commissioners	www.necpuc.org	603-229-0308	
New England Governors Conference	www.negc.org	617-423-6900	Weekly conference calls on security issues

Appendix D

Public Information Resources

Timely, accurate information on an energy situation can help prevent confusion and uncertainty, as well as encourage the support and cooperation of others.

Ongoing Options

Maine Energy Information Website. The web site, located on the Internet at www.maineenergyinfo.com contains indexed topical energy information, conservation tips and links to other energy-related information. The site is maintained by the Governor's Office of Energy Independence and Security (OEIS).

Keep ME Warm (part of the Volunteer Maine Website). The web site, located on the Internet at <http://www.volunteermaine.org/keepmewarm/index.php> provides information on Maine's home heating oil assistance program and provides opportunities for people to volunteer time and resources to help keep their neighbors warm as home heating prices escalate.

HEAT TIPS Help Line. A toll-free telephone line, 866-HEAT TIP, is operated by the Department of Economic and Community Development (DECD). DECD staff can offer technical assistance in weatherization and conservation techniques. They also disseminate the same type of conservation and assistance information offered by the web site. The help line design allows for the line to be forwarded to the State Emergency Operations Center Help Line (8 lines concurrently available) if the need for multiple operators is identified.

MEMA Press Release Library. MEMA maintains a library of press releases on safety issues relating to all hazards. Included are such energy-related subjects as winter weather safety, generator safety, etc. This information is available online at www.maineprepares.com and can also be customized to current need and disseminated quickly to media outlets as needed.

Event- or Time Period-Specific Resources

Special Public Service Announcements. PSAs featuring the Governor with a conservation message for radio and television were developed in 2000, 2004 and 2005 and can be updated as needed or serve as a template for future PSAs.

Special Newspaper Inserts. In 2000, a special newspaper insert was produced in concert with several state agencies and private industry and inserted in daily newspapers statewide. The insert included articles on conservation, weatherization and safety. This publication serves as a template for future such efforts.

Appendix E

Actions Taken or Suggested in the Past either Prior or Subsequent to a Governor's Declaration of Energy Emergency

Overview

Many actions may be taken without declaration of an energy emergency. If these actions and voluntary compliance of energy conservation measures do not alleviate the effects of the shortage and ensure the maintenance of essential services, and if the fuel supply crisis threatens to be both severe and prolonged, the Governor may declare an Energy Emergency (37-B MRSA 7-12) in order to assume emergency powers granted in the Civil Emergency Preparedness Act (37-B MRSA Chapter 13).

The Governor will specify in his proclamation what areas of the State are affected by the state of emergency. Mandatory measures declared under the Governor's emergency powers will be enforced by the Department of Public Safety.

Contingency measures outlined below are intended to encourage conservation and to reduce demand, prevent hoarding practices by consumers and to meet the needs of priority users during an energy crisis.

Any measures implemented with regard to transportation fuel should be coordinated, to the extent possible, with all of the New England states and the Eastern Canadian provinces in order to facilitate travel within the region.

Previous administrations have examined potential measures to be taken with and without declaration of an energy emergency. The current administration is reviewing and adding to this library of potential actions. Details of these measures, as well as previously suggested text of Governor's messages, are on file with the Maine Emergency Management Agency.

Potential Measures without an Emergency Declaration:

All energy resource types:

- Public information program
- Call for voluntary conservation

Transportation Fuels:

- Voluntary Retail Service Station Flag System
- Voluntary Demand Management Measures
- Voluntary Rideshare Efforts
- Increased Speed Limit Enforcement
- Speed Limit Reductions

- Reduction of Trucking Operations

Heating Fuels:

- Close Non-Essential State Buildings
- Adjust thermostats to reduce demand
- Institute Compressed Work Week for State Employees
- Voluntary work week and building restrictions by business and industry
- Open Temporary Shelters¹
- Encourage the Use of Pour Point Additives

Propane (non-heating use):

- Voluntary Restriction of the Use of Propane for Cooking
- Voluntary Restrictions of the Use of Propane Clothes Dryers
- Voluntary Restriction of the Use of Propane Vehicles

Electricity:

- Calls for voluntary conservation

Potential Measures under an Emergency Declaration:

Vehicle fuels:

- Mandatory Minimum Fuel Purchase Restriction
- Odd-Even Sales System
- Mandatory Retail Service Station Flag and Operating, Hours Measure
- Suspend Truck Weight and Size Regulations
- Priority End User Plan
- Allocation of transportation fuels.

Heating Oil, Kerosene, Propane and Natural Gas:

- Sales to Non-Priority Users
- Allocation of Heating Fuels

¹ Although the potential opening of emergency shelters is referenced in previous versions of this plan, this action has never been taken in past energy crises, and is not considered likely by emergency managers.

Appendix F

Petroleum Reserves

Strategic Petroleum Reserve

The Strategic Petroleum Reserve (SPR) is an emergency supply of crude oil stored at four sites near the Gulf Coast in underground salt caverns. Established in the aftermath of the 1973-74 oil embargo, the SPR provides the President with a powerful response option should a disruption occur in commercial oil supplies threaten the US economy. In February 1999 the Clinton Administration announced a new plan to resume fill of the SPR with federal royalty oil from production in the Central Gulf of Mexico. The initiative was designed to replace approximately 28 million barrels of oil which were sold from the Reserve in fiscal years 1996 and 1997 largely for deficit reduction purposes. Royalty oil is owed to the U.S. government by operators who acquire leases on the federally-owned Outer Continental Shelf. Under current law, federal ownership ranges from 12.5% to 16.7% of the oil produced from federal leases. The Minerals Management Service (MMS) is responsible for collecting royalties from federal oil and gas leases in cash, but in 1998 it started testing the effectiveness of collecting royalties 'in-kind' that is acquiring the crude oil itself. This mechanism was adopted to begin refilling the SPR.

In May 2001 the Bush Administration released its National Energy Policy endorsing the addition of oil to the SPR using the 'royalty in-kind' program and in November 2001 President Bush announced his intent to fill the Reserve to 700 million barrels. On several occasions, the Energy Department has agreed to reschedule incoming oil shipments to the Reserve, at the request of contractors, deferring the deliveries for several months to a year or more. In these instances, companies under contract to deliver crude oil to the Federal Government agree to increase the volume of oil delivered to the Reserve at the later date at no additional cost to the taxpayer.

The recently enacted Energy Policy Act of 2005 directs the Secretary of Energy to fill the SPR to its authorized 1 billion barrel capacity. This will require the Department of Energy to complete proceedings to select sites necessary to expand the capacity of the SPR to 1 billion barrels. For more current information, see www.fe.doe.gov

Northeast Regional Home Heating Oil Reserve

On July 20, 2000 President Clinton directed Secretary of Energy Bill Richardson to establish a home heating oil component of the SPR in the Northeast to help protect the region from possible fuel shortages. The US is now storing 2 million barrels of heating oil in the reserve which is intended to provide emergency relief from weather-related shortages for approximately 10 days. This is the time needed for ships to bring heating oil from the Gulf of Mexico into New York Harbor and from suppliers in Venezuela and Canada to bring oil into New England.

Although heating oil shortages never materialized during the 2000-01 winter, the existence of the Northeast Home Heating Oil Reserve (NEHHOR) provided an important safety cushion for millions of Americans. Recognizing this, Energy Secretary Spencer Abraham formally notified

Congress on March 6, 2001 that the Bush Administration would establish the Reserve as a permanent part of America's energy readiness effort. On August 6, 2001 the Energy Department announced their approval of relocating 250,000 barrels of the NEHHOR to the Motiva terminal in Providence, RI. Accordingly, Secretary Abraham issued a statement. "Stockpiling a portion of our heating oil inventory in Providence gives us a third geographic location from which we can distribute fuel to homeowners and businesses in the event of a supply shortage. Providence is especially advantageous because it extends our distribution capabilities into the Boston area and gives us additional truck and marine loading options." It is unclear, however, if the NEHHOR would be available to Maine during an emergency, due in large part to Jones Act restrictions.

Appendix G

ISO New England Emergency Procedures

Current ISO-NE operating procedures, with excerpts summarized below, can be found at http://www.iso-ne.com/rules_proceeds/operating/isone/index.html.

Operating Procedure No. 4 (OP 4)

The ISO-NE has a formal, detailed plan to address electricity emergencies. This plan is referred to as Operating Procedure No. 4 (OP4) or “Action during a Capacity Deficiency”. These actions are implemented when operating reserves fall below required levels to give grid operators time to respond to a variety of circumstances and conditions. The OP4 is a series of 16 independent actions to increase supply or decrease demand to address a capacity deficiency. These actions can be applied to the system as a whole, throughout New England, or on a sub-regional scale to address region-specific shortfalls.

The steps are as follows:

Actions 1- 9

- Interrupt electricity load that is under contract for interruption
- Purchase emergency contracts for short-term electricity demand from other jurisdictions
- Call for voluntary conservation measures from the public, known as Power Watch

Actions 10-14

- Move the 30 minute reserve capacity requirement to zero to allow more resources to be called into use
- Call for voltage reductions

Actions 15-16

- Radio and TV appeals through a Power Warning Appeal that in extreme conditions can involve an ISO-NE request for personal reinforcement of the message by state governors

OP 7

An additional Operating Procedure that addresses a major problem with the reliability of the electric grid is Operating Procedure Number 7 (OP 7), Action in an Emergency. This is used to thwart a total collapse of the system. This procedure involves a temporary disconnection of blocks of customers to reduce overall demand. This action is commonly referred to as “rolling blackouts” or “rotating feeders”, and would involve controlled power outages that would last a few hours for any block of customers. OP 7 may occur either automatically or managed by system operators.

OP 6

In the event that actions of OP 4 and OP 7 are not sufficient to maintain the integrity of the regional bulk electric system, or a significant portion thereof, or that system becomes substantially unstable, the system may shut down, either automatically or managed by system operators. Restoration of power to the collapsed system over the succeeding hours and days will be accomplished through procedures in ISO-NE OP 6, System Restoration.

Event Communications Plan

Throughout energy emergencies, ISO New England conducts routine briefings with government officials, provides real time communications of public advisories and stresses the importance of conservation as the first step in emergency response. They use all communications available including TV, radio, and web-site postings.

Appendix H

Case Study

Summary of Propane Perfect Storm 2007

Case Study; Summary of Propane Perfect Storm 2007

In winter of 2007, a *perfect storm* of factors contributed to a propane shortage in Maine. A summary of this situation is instructive in recognizing some of Maine's vulnerabilities with respect to propane. On February 10th, over 2,800 Canadian conductors and yard workers went on strike delaying shipments of coal, grain, car parts, lumber, energy supplies and other cargo at Canada's largest port. Maine Governor Baldacci declared a state of emergency on February 13th in order to waive the hours of service rules for transport and delivery of propane. After a significant February 14th snowstorm which dropped two feet of snow in Maine and over three to four feet in Canada, the Governor in coordination with the Maine Oil Dealers Association, issued a press release informing the public about the propane delivery problem and recommending the incorporation of conservation measures. On February 16th the Governor sent a letter to President Bush informing him of the situation and seeking assistance in pressuring the Canadian government to intervene in the rail strike that, along with bad weather, was crippling the ability of oil dealers to supply Maine with propane. Meanwhile, the Maine Office of Energy Independence and Security was getting many calls from non-heating commercial and industrial customers stating they had been cut off by their suppliers for non-essential propane deliveries. The Governor called an emergency meeting of the ERT on February 19th and was advised by an informal energy task force (ETF) composed of Energy Resource Council members, as well as many other agents of the liquid fuels industry.

Surrounding New England states and New York were experiencing tight supplies but reported no allocations like Maine. Rough seas delayed the arrival of ships in Newington, NH and Providence, RI during some of the coldest weather of the winter at a time when energy demand across the region was higher than normal. Supplies of propane continued to dwindle at other New England terminals, particularly Sea-3, a port terminal in Portsmouth, NH. Sea-3 was on 50% allocation and had received product on February 15th.

Just when it appeared the situation couldn't get any worse, a pipeline rupture temporarily disrupted supplies to a terminal in Selkirk, NY which serves as an alternative source for Maine's propane needs. TEPPCO, a large propane pipeline which brings shipments from the Gulf Coast to terminals in the northeast, declared *Force Majeure* on propane deliveries east of Todhunter, Ohio, after detecting a leak at its Seymour, Indiana location on February 20th. TEPPCO began repairs on its broken valve and opened up again a few days later on, February 23rd, but long lines at Selkirk were the result. Propane inventories declined in New England during the week of February 23rd by 73% as the rail strike in Canada and the outage of the TEPPCO pipeline drastically reduced propane deliveries.

According to authorities, the next Algerian waterborne shipment was not due to arrive at Sea-3 for three weeks or until March 6th. The Providence, R.I. terminal had no propane supplies and was expecting a shipment to arrive on February 24th. Portsmouth, NH Sea-3 LPG waterborne deliveries were still in a state of delay as of March 7th and then again on March 11th due to bad weather at sea. Projections were recalibrated for ship deliveries significantly impacting dealer expectations. Concerned with meeting contractual obligations, some Maine dealers were forced to drive truckloads of product from Connecticut, driving Maine propane prices up.

During this three-week re-supply gap, Maine railroad officials worked with Canadian National to retrieve propane rail cars in Montreal and put them in priority for delivery to Maine. The rail terminal in Auburn, which typically receives 40 propane cars a week during winter (each carrying 30,000 gallons) received only 15 railroad cars during the week of February 23rd. Also,

Department of Homeland Security Customs and Border Protection worked with border officials to expedite deliveries into Maine by temporarily streamlining border crossing procedures.

Throughout this mid-February to mid-March period, the Maine Emergency Management Agency (MEMA) coordinated all propane supply activities in the State. Governor Baldacci, MEMA, Maine Department of Transportation, Maine Office of Energy Independence and Security and other Maine government officials were in contact with businesses, propane distributors, CEOs of propane distribution companies, the Canadian government, Northeast utilities or government organizations, federal government agencies and neighboring states. Arrangements for incremental supplies of propane to be delivered to Maine were made so that companies could meet their obligations to primary heating customers. Maine recommended conservation measures for propane customers. Some Maine propane dealers put their non-essential commercial customers on allocation causing many of these businesses to suffer economic hardship.

On February 20th, after the Canadian Industrial Relations Board refused to rule the strike illegal, a federal mediator was brought in and on February 26th a tentative agreement to end the strike against Canada's largest railroad was achieved. Striking conductors and yard-service staff went back to work and railcars finally began to move and be *spotted* which means the car has been hitched, processed and is moving towards its destination. There was some concern that empty cars be sent back through Sarnia to avoid the strike zone. Distributors were projecting a steady flow of railcars with product but as of March 1st allocations from the Duke terminal in Auburn were still not consistent or adequate to meet demand. Railcars were arriving periodically but not with the necessary frequency to meet demand. Although the strike had ended, it took weeks for supplies to arrive in Maine and the state of emergency was extended until 3/15/07 to allow the waiving of truck drivers delivery hour limits. Fast pass requirements at the border were extended to allow Canadian drivers quicker access to both sides of the border.

No Mainers went without heat during the four week crisis, but Maine propane dealers had to take serious steps to control their inventories by either making partial deliveries or skipping homes whose tanks were more than half full. In some instances, dealers looked to competitors to provide enough propane to at least make partial deliveries to essential or critical need heating customers. Due to prolonged delays in railcar deliveries, some companies were rationing supplies and sent trucks as far away as Providence to get product. All dealers had to absorb the cost of redoubling delivery to get some customers back to normal or pre-rationing levels. When it was all over, some propane distribution companies were investigating expanding their supply options while other dealers wanted to expand their storage capabilities. The propane crisis came at a time when TV ads created by the Propane Education and Research Council were promoting the use of propane as a flexible fuel for water heaters, cook-stoves, clothes-dryers and furnaces.

Lessons learned from this perfect storm of events include: the need to have information and communication protocols, good information on propane supply movements, inventory patterns, storage and consumption. The increased demand for propane by the industrial and commercial sectors must be better understood, tracked and documented. Maine needs a better understanding of its capacity to convert to dual-fuel capacity for natural gas and propane. The State needs to establish better personal business relationships and connections with the Northeast Propane Associations and the CEOs of propane distribution companies as these were the most helpful and valuable players in finding beneficial solutions to propane supply problems. These relationships proved to be most valuable to Maine in its time of need.

Additionally, in hindsight it has been acknowledged that Maine could benefit from having a real-time freight monitoring system for ease in tracking the movements of fuels in and out of the State

of Maine, Canada and New England. Maine State government needs to increase the comprehensiveness of its understanding of propane infrastructure, key players and their contact information. Maine State government needs to improve the communication it has with propane distributors and suppliers and institute a protocol similar to that which exists with #2 heating oil waterborne terminal operators. And it may be necessary to enact legislation mandating bi-weekly reporting of propane inventories to the state by propane distributors as with other fuels.

Appendix I

TEPPCO Pipeline Map

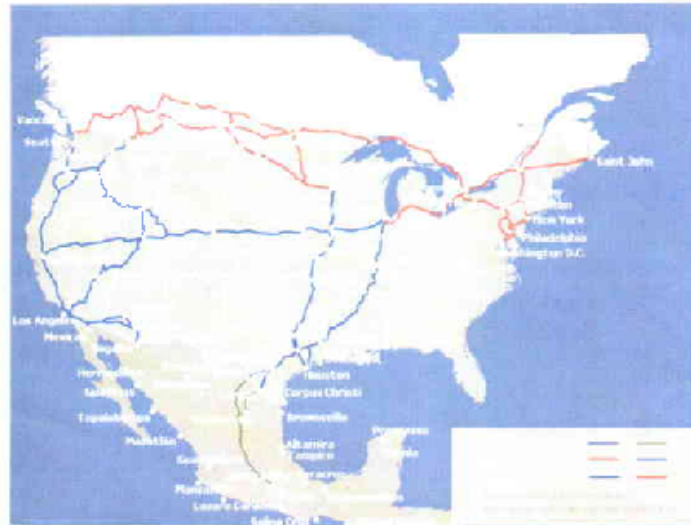


Appendix J
Border Crossing Maps for Railroads
transporting in and out of Maine

CSX



1. $\sqrt{144} = 12$ and $12 \times 12 = 144$. $\sqrt{144} = 12$ and $12 \times 12 = 144$.





A Division of Borealis Inc.

St. Lawrence & Atlantic Railroad (SL&A)





Appendix K.
MDOT Rail and Freight System Maps
2007



MaineDOT

MAINE RAIL SYSTEM 2006



**RAIL LINES,
INTERMODAL FACILITIES,
HEAVY HAUL TRUCK NETWORK,
AIRPORTS,
PORTS**

Appendix L

Maine Primary Terminal Operators Contact Directory

Primary Terminal Operators/ Contacts Directory

Betsy Elder 1/16/07

<u>Company</u>	<u>Contact</u>	<u>Terminal Locations</u>
Citgo/Irving	Bill Sousa (operator)	South Portland
No longer Motiva (Irving 55% and 45% Citgo ownership)	Kevin Herrington (assistant operator) 102 Mechanic St., South Portland, Me. 04106 Telephone -799-3394 Fax 799-0319	Bangor
Irving	Rob Wilson- Manager IOTI in Portsmouth (Irving Oil Terminals Inc.) 603-559-8818 190 Commerce Way, Portsmouth, N.H. 03801 Rob.wilson@irvingoil.com Kevin Mikoski – Product Supply Analyst Phone- 603-559-8755 FAX 603-559-8793	Searsport
Gulf Oil	Mark Pennell-Terminal Manager 175 Front Street, South Portland, Me. 04106 799-5561, Fax 799-2994 David Moody (terminal supervisor) reports (Kevin McAtee - 617-889-9031 in Chelsea)	South Portland
Sprague Portland	Larry Laverrierre- Terminal Manager Lower Main Street, South Portland, Me. 04106 Mike Price- Merrill pier 799-4899, Fax 767-631827 Jim Theriault - 603-430-5372 Searsport Bucksport Louise Payeur – reports from Sprague, Tom Dobbins -Two International Drive, Suite #200 Portsmouth, NH 03801	South
ExxonMobil pipeline	Bart Whittmer -207-767-3251, Fax 767-3253 170 Lincoln Street, South Portland, Me. 04106 Exxon Mobil-DFOC attn: Brown 3033 Irving Blvd. Dallas, Texas 75247-6212 Room 7B30 phone- 214-951-2403 FAX 214-951-2568	Portland Bangor via
Webber Oil	Candice M. Morrill- Product Control Coordinator	Bangor,

Brewer,

207-942-5501 Xt. 5044 Bucksport
700 Main St., Bangor, Maine 04401 (As of 10/02 they own all storage locations)

Webber Curt Smith 207-469-3165 (office manager/reports) Brewer
Tanks Inc. P.O.Box CC, Bucksport, Maine Bucksport
(half Dead-River
/half Webber Oil)

Global Petroleum Bill Murphy (sales) - 207-883-9196 South Portland
Bruce Yates (Terminal Operator) 207-767-8259
(Global owns) Northeast Petroleum Terminal,
1 Clarke St. South Portland 04106 byates@globalp.com
(#2, #6 and kero heating fuels all at NEPT which is a public Co.
Throughput gasoline/diesel at Exxon Mobil or CitgoIrving
operations. Gasoline aspect is run as a private entity. Global
started out as two brothers with a gas station in Boston

FPL Sandy Lindenburg 207-846-8184 FAX846-8180(#6 for Wyman Station)
Mark Grover – Plant/Production Leader(reports)- Todd
667 Cousins Street, Yarmouth, Maine 04096
207-846-8189

Portland Pipeline just handles crude; contact Tom Hardison 207-767-0440/direct or 767-0430
Business Services Director Dave Cyr- 767-0450

No Terminals/Thruputters- Gasoline operations

Getty Jim Stewart -799-8518 Fax 799-8316 (27Rear Maine St., South Portland)
Catamount

Appendix M
Propane Gas Association of New England

PGANE
P.O. Box 859
Moultonboro, NH 03254
Phone: 603-544-2226
FAX- 603-544-2228

President : Denis Gagne
Eastern Propane Gas
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dgagne@eastern.com

Sr. Vice President

Joe Rose
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FAX-508-252-3359
jrose@propaneplus.com
Director at Large
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Essex Junction, Vt. 05453
207-879-4177
FAX- 802-872-8827
mstevens1941@verizon.net

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